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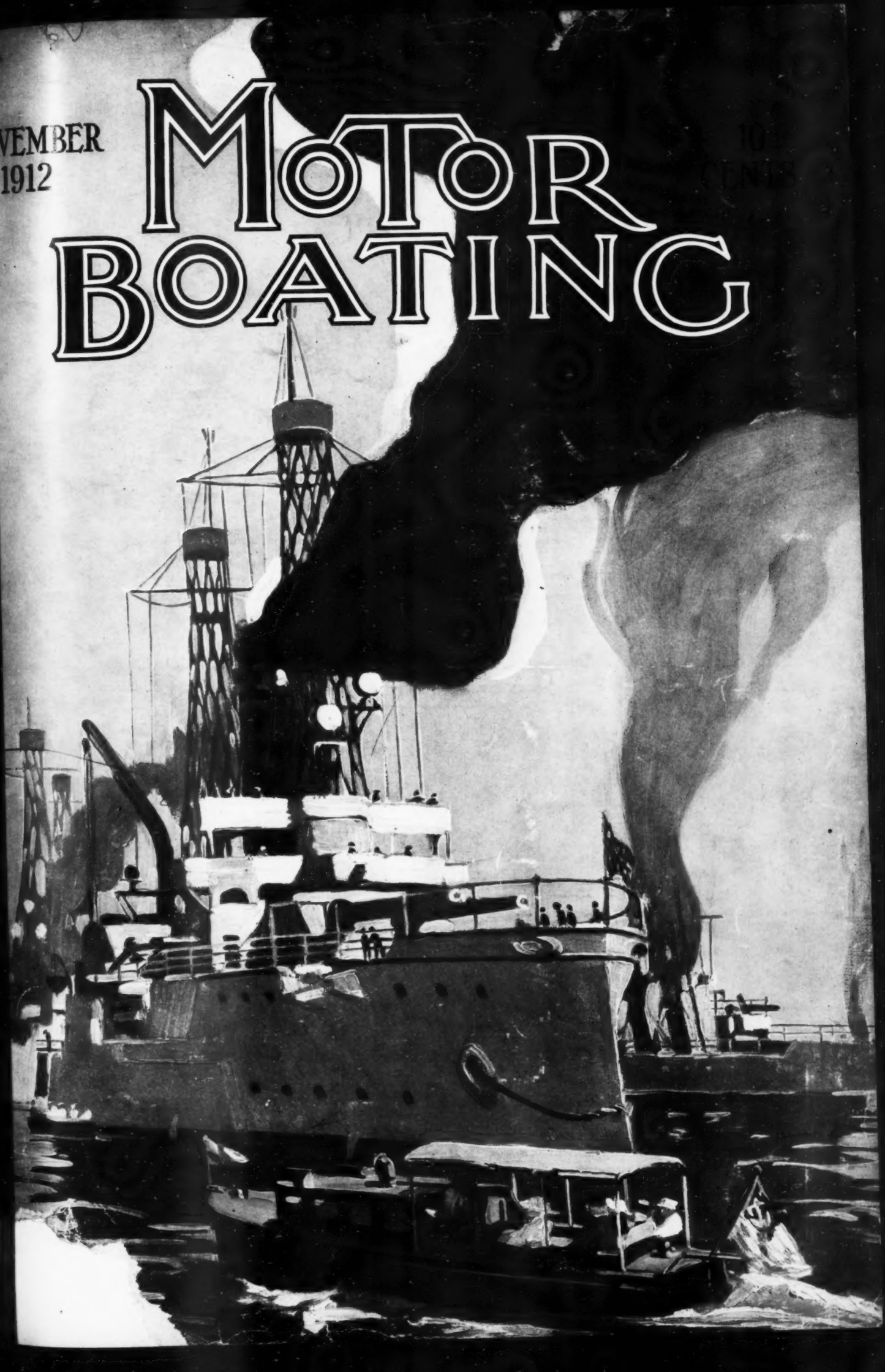
1912

MOTOR BOATING



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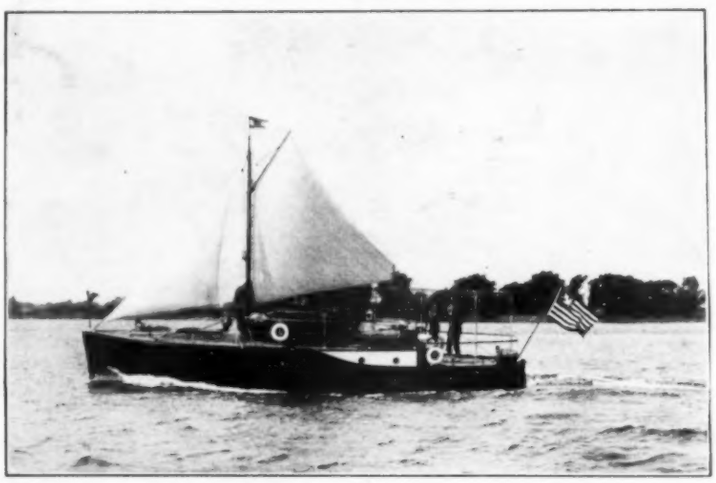

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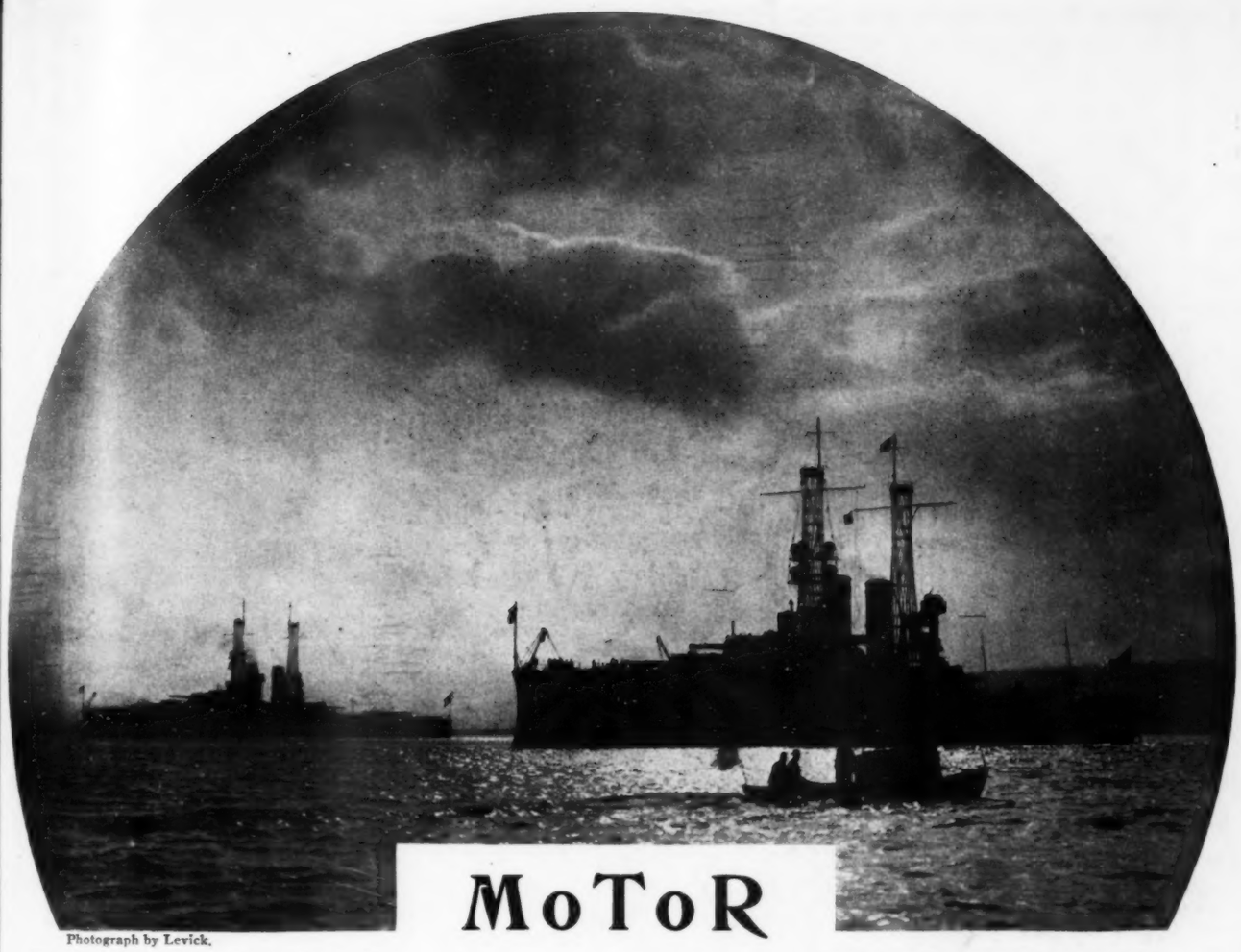

Photograph by Levick.

MoToR BoatinG

November 1912

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The cover poster for this issue was painted for MoToR BoatinG by John Olaf Todahl.

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The motor tender used by Secretary of the Navy, Meye..

Photographs by Rosenfeld.

President Taft leaving the motor tender of his yacht, Mayflower, on a visit to the Connecticut, the flagship of the Atlantic fleet recently mobilized in the Hudson River.

MOTOR BOATING

THE NATIONAL MAGAZINE OF MOTOR BOATING

STARTING.

The First of Several Articles on the Racing Situation and Its Needs, by the Foremost Authority on the Subject in America.

By J. Stuart Blackton.

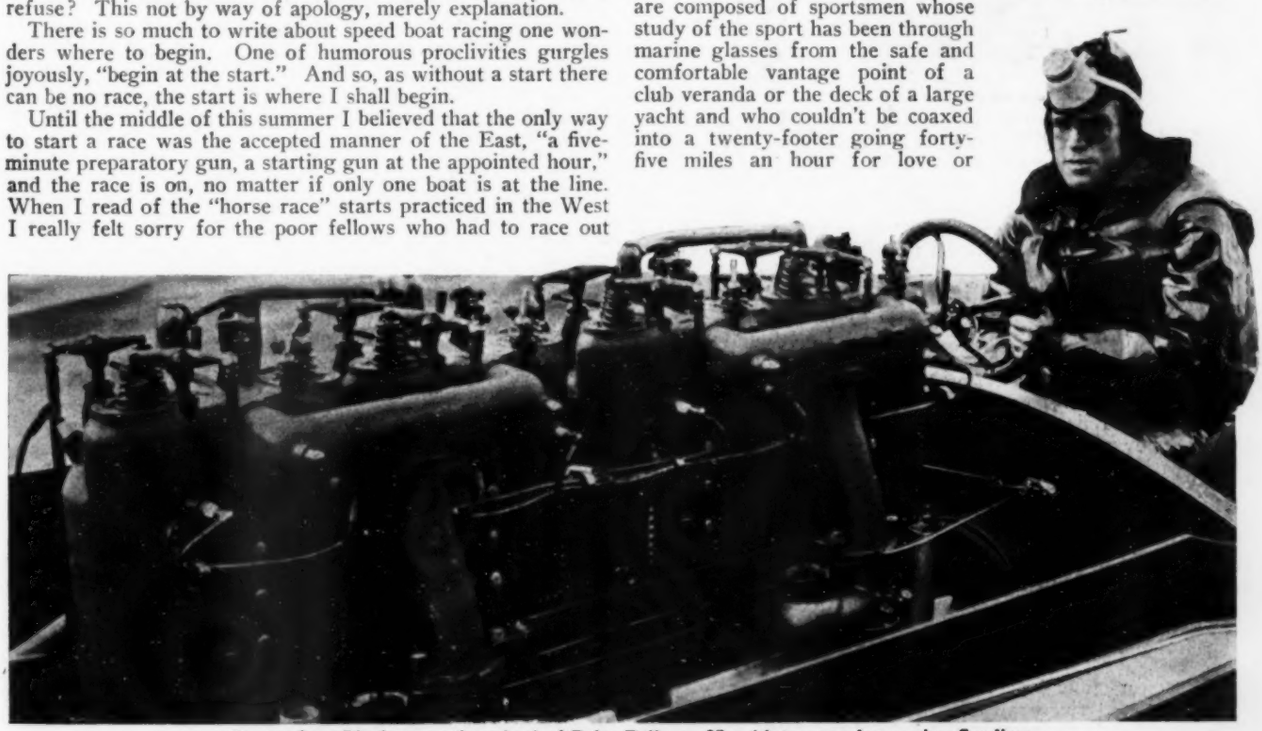
Commodore, Atlantic Yacht Club.

Commodore Blackton, the owner of the famous string of Baby Reliances, to say nothing of Vita, Viva, Vita, Jr., Paula, Sweet Marie, and then some, is already well known to the readers of MoToR BoatinG. Driving his own boats, as he does, the Commodore is particularly well able to discuss the racing situation and its needs; more so, we should say, than any other man in the country. Read what he says about the horse-race method of starting the classes used so successfully by the Western Associations.—Editor.

AS I climbed out of the "sawed off terror of the Great Lakes" as a humorist at the Buffalo Regatta dubbed Baby Reliance II, and regained terra firma, just after winning the splendid E. R. Thomas Interlake Championship Trophy, a representative of MoToR BoatinG grasped my very wet and oily hand and said: "Do you know you have smashed all world's records from five miles up to thirty-five?" Then without giving me time to answer, he asked if I would contribute an article on motor boat racing for the next issue. On such an occasion, and under such circumstances who could refuse? This not by way of apology, merely explanation.

There is so much to write about speed boat racing one wonders where to begin. One of humorous proclivities gurgles joyously, "begin at the start." And so, as without a start there can be no race, the start is where I shall begin.

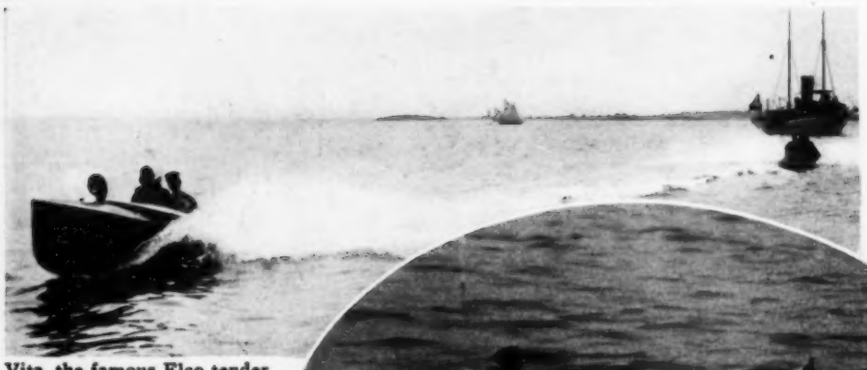
Until the middle of this summer I believed that the only way to start a race was the accepted manner of the East, "a five-minute preparatory gun, a starting gun at the appointed hour," and the race is on, no matter if only one boat is at the line. When I read of the "horse race" starts practiced in the West I really felt sorry for the poor fellows who had to race out there—expressed myself freely about motor boats not being horses and—well, acted like most people who know only one side of a subject, and give free public lectures on it to the exclusion of "the other side." Now I know better. Whoever conceived the idea of starting races as they do under the Western Power Boat Association rules was undoubtedly an experienced racing man, and right there is the crux of the whole matter of racing rules and racing committees. Most of the rules we race under were invented by men who have never owned or operated a racing boat, and many of the "racing committees" are composed of sportsmen whose study of the sport has been through marine glasses from the safe and comfortable vantage point of a club veranda or the deck of a large yacht and who couldn't be coaxed into a twenty-footer going forty-five miles an hour for love or



Photograph by Rosenfeld.

President Taft leaving the motor tender of his yacht, Mayflower, on a visit to the Connecticut, the flagship of the Atlantic fleet recently mobilized in the Hudson River.

Commodore Blackton at the wheel of Baby Reliance II, with her 150-h.p. racing Sterling.



Vita, the famous Elco tender, with which the Commodore started his racing career.

Mosquito, the 14-foot hydro built in a week to show up the handicap rules.

Baby Reliance II (insert), the most famous speed boat in the country, and Viva, one of the defenders in last year's International races.

Mrs. Blackton is herself the owner of several speed boats.

money. What do these people know of the necessities of the game, of the difficulties to be surmounted, the dangers to be risked and the obstacles that must be overcome?

After a wide and varied experience in all kinds of motor boat racing in the East, West, South and—North, I am strongly and unqualifiedly for the Western method of starting—i. e., the race is to start at three o'clock, say—*all* the available entrants are notified to report to the judges fifteen minutes before the race—each boat has its place—number one being the "pole" boat or nearest to the judges' stand, the places having been drawn by lot. At five minutes to three the drivers are told to get ready, and if at three o'clock all the boats entered are back of the line the starter signals to them to "come on," keeping as nearly in line as possible according to instructions; if they are well bunched the flag is dropped, the gun fired, the race is on and "the devil take the hindmost." If, however, at three o'clock one or two boats are unable to start owing to flooded carbureters, sooty plugs, a broken or short circuited wire or any one of the thousand mysterious causes whereby motors won't mote when they should, the judges will delay the start five, ten and even fifteen minutes, and that is where the "horse" sense of the W. P. B. A. rule comes in. How many races have been shorn of their interest because the star boat couldn't be made to go until too late? How would the sportsmanlike owner of Wigwam II have felt at Davenport last July after shipping his boat and crew from Astoria, Oregon, if, while his engineer was working to get the motor started, the gun had boomed and the other boats whizzed away, leaving him inert at the line?

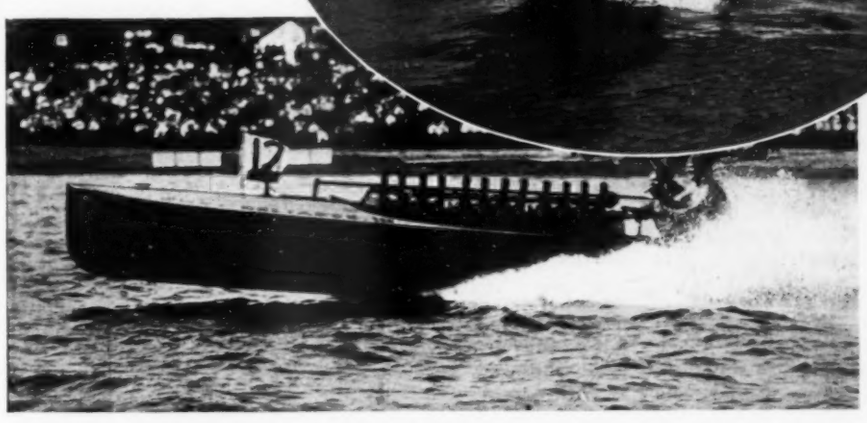
But, dear motor boat fan, no such thing happened—the appointed time arrived, the boats lined up and waited—one of the drivers—finally approached the judges' stand and yelled "why don't you start the race?" The starter, too experienced to try to talk against an open exhaust, pointed mutely to where a perspiring mechanician was working like a fiend to make her go. The complaining driver understood—waved his entire satisfaction with the proceedings and went back to his place. A few moments later the delinquent motor sprung into life with a good healthy roar—her stout, good-natured owner executed a wild *pas seul* on the river's brink where he had been watching in an agony of mind whose tortures I know only too well, the starter dropped his flag and they were off in a bunch that brought the grand stand to its feet with yells of excitement and enthusiasm.

Unfortunately I was unable to be at Davenport—the only regatta I missed—and all this was told to me, but at Chicago I experienced for the first time the joys of this rule. One of my boats was overturned and sunk while trying out on Monday. the morning of the first day's race. On Wednesday by dint of much wiring and wire pulling, the express company delivered my other boat which was being prepared for the International Race, equipped with a brand new engine that had never run except on the block in the factory. An hour before the first

Sweet Marie, the Commodore's barge, is the newest and not the least important of his fleet.

Baby Reliance IV, the 26-footer with two 150-h.p. Sterlings.

Vita II was built for last year's International races.



Vita Jr. (insert), the commodore's Reliance-built 20-footer; and below, the 20-footer, called at that time Baby Reliance III, that did the mile at Davenport at the rate of 53.7 miles per hour.

Commodore Blackton in his racing togs and smile.

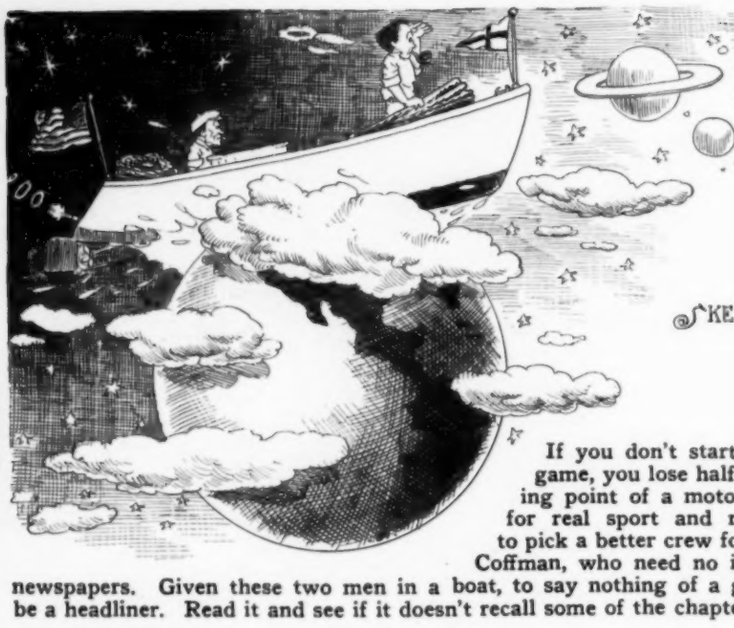
race, we took her out for a trial spin, made a few adjustments and tied up to the judges' float just as the word went forth to get ready. The other boats' motors poped off all around us like packs of giant firecrackers, but nary a squawk from Baby Reliance II. My stop watch said one minute to three and the race was to start at three—as I thought. My engineer, tried and true companion of many races, was doing all that mortal man could to "make her speak"—I shrieked above the surrounding din that we had only ten seconds left, when suddenly a hand was laid on my shoulder and a voice from Heaven whose earthly translator was President Osborne of the W. P. B. A. said, "Don't worry—we'll wait for you!" And they did—just three minutes, that was all—and we all got off together to a beautiful start and the Baby won the race just to prove there was nothing serious the matter with her innards—only a little touch of motoritis, that was all. But what would have been my feelings sitting there helpless, after losing one boat and moving Heaven and earth (and the express company) to bring another one a thousand miles to race—only to be left at the post because of a cut and dried rule formulated by some man who could not start a high-powered racing motor to save his life.

Baby II and Baby III aboard Sweet Marie tuning up for the International Races.

I know the other side of the argument is "a motor should be ready to start." That admits of no argument, but the dismal fact remains that at almost every race some boat is unable to start just on the dot—Maple Leaf IV—perhaps the most expensive and powerful racing boat in the world, was unable to start until many minutes after the gun in the first International Race at Huntington this year. That race would have been far more interesting and sportsmanlike if run under W. P. B. A. rules. In the opinion of many the result of the last day's International Race might have been different if Baby Reliance III had not been nearly three minutes late in getting started.

All of which argues for a method of starting which gives every boat a chance to try its actual speed against the others. When a racing boat and crew is shipped a great distance at a very heavy expense, it seems almost criminal to start the race with the visiting boat left out of the running and the owner is not likely to repeat the visit after one experience.

During the past three years of winter and summer racing, I have started and driven racing boats in at least as many and perhaps more races than any other individual—under all kinds of conditions and rules, and it is my belief born of such experience that the Western, or horse race method of starting motor boat races, is the fairest, most sportsmanlike and most satisfactory to both boat owners and the public. I was asked to write an article on motor boat racing and, lo and behold, the allotted space is already used up and I have progressed no further than the start. It may be that the Editor will let me drive as far as the first buoy in another issue.



A TRIP TO NOWHERE IN A SIXTEEN-FOOTER

BY HERBERT ERNEST HANCOCK

SKETCHES BY HAL COFFMAN

Part I

If you don't start with the small boat and sort of grow up in the game, you lose half the fun of it. The small boat is the logical starting point of a motor boatman's career, and the possibilities it offers for real sport and real experience are unlimited. It would be hard to pick a better crew for interesting results than Mr. Hancock and Mr. Coffman, who need no introduction, at least to those who read New York newspapers. Given these two men in a boat, to say nothing of a gasoline engine, and the resulting story is bound to be a headliner. Read it and see if it doesn't recall some of the chapters of your own experience.—Editor.

HISTORIANS—if there are any such persons left—will probably skip over September 1, 1912, as a day devoid of any public interest. But if we, by any chance, ever slip off the yoke of newspaperdom and discover what it is to be a compiler of dates and doings, there will be a special chapter accompanied by an illuminated frontispiece on aforesaid day.

For this marked the tremulous start of the Helen H., and her crew to the Land of Nowhere, lasting exactly seven days, six hours, and fifteen minutes.

In New Rochelle creek, bordered on the east by Glen Island of clambake fame, and on the west by the Huguenot Yacht Club, which possesses the most efficient bill-mailing system in the country, lies the Helen H., in her sixteen feet of glory and five feet of muddy water. So famous has she become because of her wonderful voyage that each barnacle in the creek vies with his fellow to secure a foothold—or toe-hold—on her bottom, so that to-day her keel resembles a bird's-eye view of a bridge crush at its height.

We have owned, fed and nursed the Helen H., for three years. Five years ago her hull was built at Gravesend Bay for a youth named Vic who proved to be our motor-boating nemesis in the years to come.

For two seasons he was content to chug along with a four horse, single cylinder outfit. Then he suddenly went insane at a Motor Boat Show and with a loud cry and depleted pocketbook, removed the single cylinder engine, replacing it with a semi-heavy duty, two cylinder, seven horse power, 200 pound affair. When he regained his mental equipoise he looked at what he had done and grew afraid. So he sold the Helen H. to us and we were not afraid, chiefly because we knew nothing whatever about boats or engines.

For two summers of Sundays we "skippered" the Helen H. to and fro across the Sound and back, and a run of twenty miles was a great achievement.

It was not until last June that we became thoroughly acquainted with the victim whom fate had chosen to be the chef of our notable trip. One of his first questions concerning the Helen H. was why we didn't take a long cruise in her.

"My boy," we replied patronizingly, "did you ever hear of anybody taking a cruise in a sixteen-foot open launch?"

"Yes," he said, "on the Mississippi River——," but he got no further.

"River!" we exclaimed, "who wants to cruise on a river? The Albany day boat will give you that. No, no. When I get a boat with a cabin I'll take a cruise, but not before."

"If you haven't made plans for your vacation," said he, unabashed, "I'll go along in your sixteen-foot boat on any kind of a cruise you suggest. You run the boat and I'll cook. That is, if you're not afraid."

That settled it. Afraid? Never! We would go.

In half an hour we had settled what we imagined were the all-important details. Lists of pots, pans, and other supplies were carefully made out and, forgetting the most important detail of all—our wives' permission—we departed homeward filled with aeroplanic sensations.

Then we came down to earth with a thud, very dull and very sickening. The contemplated cruise began to sag in the middle and melt away. The indignant wives vowed that if they couldn't go neither of us could. The next day we plotted and planned, and finally resolved on trickery.

"If Mrs. Coffman consents to let us go for one week of our two weeks' vacation, will you make a similar concession?" we pleaded, and a reluctant "yes" was the answer. The next night the "chef," looking as innocent as a cold marine engine, recited his little bit.

"Hank's wife has agreed to let us go for one week if you will," he said, and then waited while aeons of time passed and new worlds lived and died.

"Well, I suppose so, but only one week," were the words that rolled away a thousand years of unutterable woe from our heaving bosoms.

Only one week remained for fitting-out, so one sultry afternoon we elongated our luncheon hour and went shopping.

First we bought two army cots to use camping, as the Helen H. presents no sleeping accommodations. Blessed be the man who invented those cots. Then we in turn visited the pottery, tinnery and clothery departments. Before we got through there were salesladies to the right, left, north, south, east and west of us, and after it was all over we couldn't remember half of our purchases.

Soon there were salesladies to the right, left, north, south, east and west of us.

Here, however, is a list of the supplies, exclusive of food-stuffs, that greeted us at the Huguenot club where he had them shipped;—

1 26 lb. Dirigo folding anchor, and 150 feet of 5/8 in. manila rope.

5 gallons of Havoline oil (medium).

2 army folding cots ($2.49 each).

1 large skillet; 1 large and 1 small stew pot; 4

The chef was as full of enthusiasm as the seltzer bottle.

deep tin plates; 2 agate drinking cups; spoons, forks, knives.

2 charts.

1 2 gallon stone jug; 1 one gallon stone jug.

1 quart of denatured alchol.

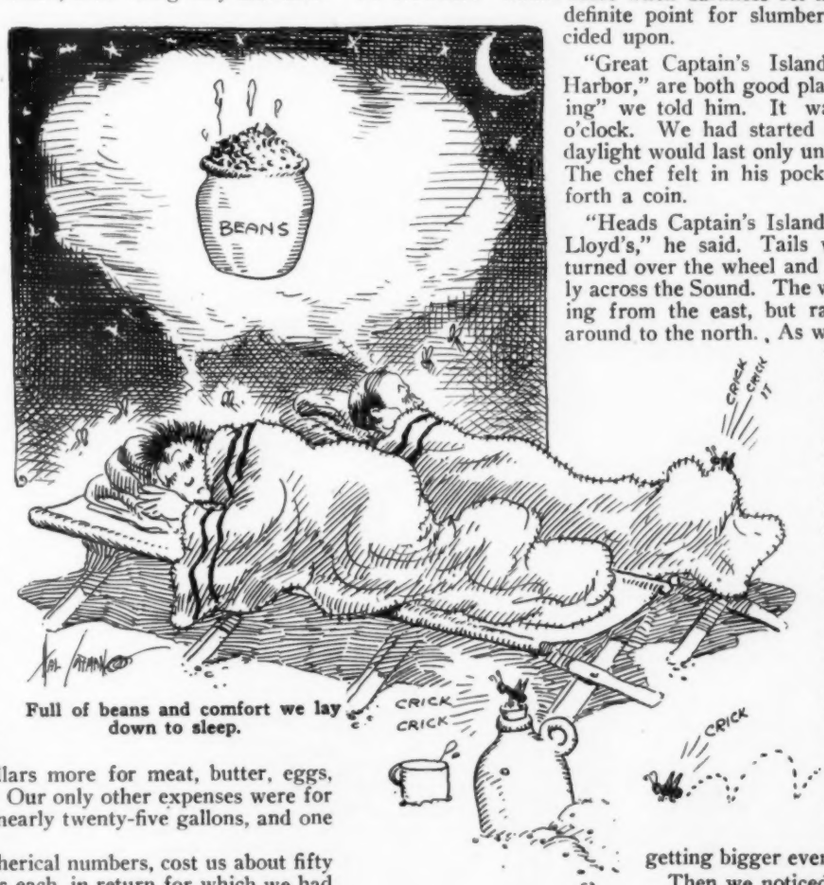
1 alcohol stove ($1.25).
5 gallons kerosene.
1 lantern.

These things represent an outlay of $22.38, or about $11 each, as the chef "divvided" with us on everything. The stone jugs were used to carry drinking water, and we found they kept their contents wonderfully cool even on the hottest day. The stove proved to be as big a blessing as the cots. On rainy days and nights it sputtered away underneath a panful of beans unmindful of the cruel, wet world outside and we treasured it like an only child. We only made two mistakes in this list. One was that we took along enough lubricating oil to speed up the Mauretania, and the other was not taking enough alcohol for the stove. This little slip almost sent the chef cooking for Davy Jones, if Davy resides at the bottom of the Sound, as will be narrated further on.

The food question we left entirely to the chef. He turned a formidable list over to us, which, after being duly and thoroughly blue-penciled by our respective and respected wives, faced the delighted grocer as follows:—

4 boxes of sliced bacon.
3 cans of tomatoes.
4 cans of baked beans (largest size).
3 pounds of granulated sugar (2 pounds too much).
3 pounds of salt (also 2 pounds too much).
1 pound of butter.
4 cans tomato soup.
8 small cans condensed milk.
4 cans essence of coffee.
1 doz. large onions.
2 dozen eggs.
1 small can tea.
1 loaf bread.
1 dozen potatoes.
½ doz. lemons.
1 large tin box soda crackers.
1 bottle olive oil.
3 green peppers.
1 package flapjack flour.
1 jar chipped beef.
1 bottle catsup.
½ doz. oranges.

For this we handed the grocer $6.60. During our trip we spent about ten dollars more for meat, butter, eggs, bread and fresh vegetables. Our only other expenses were for gasoline, of which we used nearly twenty-five gallons, and one night spent in a hotel.



Full of beans and comfort we lay down to sleep.

Our trip, considered in spherical numbers, cost us about fifty dollars, or twenty-five dollars each, in return for which we had at least a million dollars worth of fun and excitement. There are many things on these lists that the average boat owner need not include, and $40 could be counted on to easily carry two bold sea-farers through a similar trip and leave them fat and sleek afterwards.

All of these things were packed into the Helen H. with a dexterity that made the club stewards gape. Besides, two strips of canvas, one the boat cover, and the other measuring about 15 feet x 6 feet, were stowed in the forward cockpit with two dress suit cases containing extra shirts, handkerchiefs and toilet accessories.

At last the great day came, and when we saw it we wished it hadn't. Never had it rained harder than on that miserable Sunday morning. George and Henry, the Huguenot Club stewards, endeavored to soothe us by bringing forth bottles of ginger ale as we sat with the "rocking chair fleet" members that had come to see us off but somehow or other ginger ale didn't have the proper "punch" and we were disconsolate.

The Captain of the good ship Helen H.

The chef, who at all times was as full of enthusiasm as a newly opened seltzer bottle, wanted to start anyhow. Calmer minds prevailed, and at one o'clock in the afternoon we wandered back to the hospitable roof of a certain boarding house lady who had thoughtfully provided enough roast chicken to cheer our inner selves.

The ice cream had just been brought on when Coffman looked out the window.

"The rain has stopped," he yelled, and leaving ice cream and coffee behind us we bolted back to the club. Fifteen minutes later the Helen H. was chugging up the creek and the voyage was on.

We laid our course along the south shore line, passing in turn Echo Bay, Larchmont and Mamaroneck harbors. Then we quietly hinted to the chef that the romantic side of "A Trip To Nowhere" would cease when darkness set in unless some definite point for slumberland was decided upon.

"Great Captain's Island or Lloyd's Harbor," are both good places for camping" we told him. It was then four o'clock. We had started at 3:15 and daylight would last only until about 6:30. The chef felt in his pocket and pulled forth a coin.

"Heads Captain's Island and tails for Lloyd's," he said. Tails won it so we turned over the wheel and started bravely across the Sound. The wind was coming from the east, but rapidly veering around to the north., As we gained deep water we struck a nasty chop that sent spray over our starboard bow until we ordered all hands to set sprayhood.

The chef, being all hands and considerable feet too, got to work with a will, and one hour later saw us midway between Captain's Island and Oyster Bay with the waves getting bigger every minute.

Then we noticed a gracefully-lined cruiser bearing down on us and it wasn't long before the good ship Avalon III, owned by "Vic" our nemesis, loomed into hailing distance with her owner beaming a mephistophelean (some word that) smile on us. The Avalon III was returning from a week-end among the Norwalk Islands and Huntington Bay, and—as the chef put it—proved to be our "last glimpse of civilization."

As "Mrs. Vic" wafted us a kiss which we returned while her husband was busy at the wheel, we separated and rapidly became a sixteen foot atom in a wide waste of ugly, grey water.

All at once there was a gasp from the engine, a succession of knocks and a "what's happened?" yell from the chef, who

had been uneasily reclining on a coil of rope in the stern.

We confessed at once that we hadn't an idea in that direction, and kept our own counsel while realizing that one of the Helen H.'s cylinders had ceased to work. Previous experience with wet weather had taught us that an engine in a box was worth two in the rain, so that before fitting out for the trip we had had our plant covered.

Keeping our left hand on the wheel we used the right to lift the lid of the engine box and saw that the spray had leaked through on to the coil, short circuiting the forward vibrator. The after cylinder was still performing a goodly number of R.P.M., so we hastily shut down the lid, threw a piece of canvas over it to prevent further leaks and prayed silently. Our prayer was answered in a few minutes and the front cylinder began to pick up again.

Never had it rained harder than on that miserable Sunday morning.

Lloyd's Neck, on the northerly side of the entrance to Oyster Bay rose out the greyness, and we could see a gleaming line of white sand around the point. Larry Huntington, New Rochelle's saltiest salt had told us of this place, and advised us to try it for camping purposes. It was getting dark and as Lloyd's Harbor in Huntington Bay was still several miles off, we figuratively "fell on the neck" of Herr Lloyd.

We came upon it with water dripping from our spray-hood and the waves white-capping all around us. The place proved to be a sand works with an artificial creek forty feet wide and twenty feet deep at high water, running nearly a mile inland. A more sheltered place it would be hard to find and the clean, white sand heaped in great piles along the banks was a sight worth seeing.

We raced up this creek, dodging underneath the salty-ropes of a big sand barge moored on one side until we had run almost as far as we could go, and then, realizing that it would be pitch dark in a few minutes, we run the Helen H., up to the bank.

With a brave cry of "I gotcher Steve," we grabbed his right foot.

It was as if some guardian angel had prepared a place for us, for there, spread out on the same, was a mass of old lumber, long heavy logs and several big empty, casks. For fifteen minutes we worked like trojans piling up the logs against a big mound of sand until we had a three-sided shack twelve feet long and eight feet deep. Then we hauled our pieces of canvas out of the boat and spread them over the logs which gave us a water-tight roof. In fifteen minutes more we had unloaded the Helen H. of cots, stove, bedding and food supplies. Just as we sat down to rest the rain came.

Coffman comes from the west where they are wont to talk of cloudbursts like we in the east speak of ordinary thunderstorms, but the chef was strangely silent that evening and not once did he attempt to recall any weird tales of Rocky Mountain tornadoes, etc. For this was a real no'easter that had come upon us and, I have been told, the worst seen on Long Island Sound for many years.

The chef and the alcohol stove made good at the very start. Full of beans and comfort we spread out the army cots, and lay down to sleep at the disgraceful hour of eight. It was probably eleven o'clock when our slumbers were disturbed by the chef.

"Hank," he whispered in sepulchral tones, "there's a snake in here or this place is haunted." We lit a match and found the chef groping amidst the blankets. The flare also revealed many other things, mostly crickets. The shack had evidently become a haven of refuge to all the insects on Lloyd's Neck for along the boards appeared a regular procession of moths, beetles and crickets, each one singing a different song and none of them in tune.

We tried to re-assure the chef, but he was greatly irritated and insisted on trying to start a "smudge" fire in the shack. All the wood we could find was soaking wet, but finally the chef managed to cause a conflagration among several pieces of damp paper. The smoke was worse than the insects, so after choking vociferously we cast the "smudge" into the darkness and went to sleep.

Five o'clock revealed as tempestuous a Monday morning as old man Noah ever boasted of. The north-east wind was blowing straight down the Sound, sweeping the rain in sheets before it. We peered out across the sand dunes and in the distance saw the Sound in its glory of angry waters, green with white streaks of foam splashed across it. Both of us sighed and crept back into the shack, and in creeping we knocked over the alcohol bottle. The cork flew out and in a twinkling the bottle was empty.

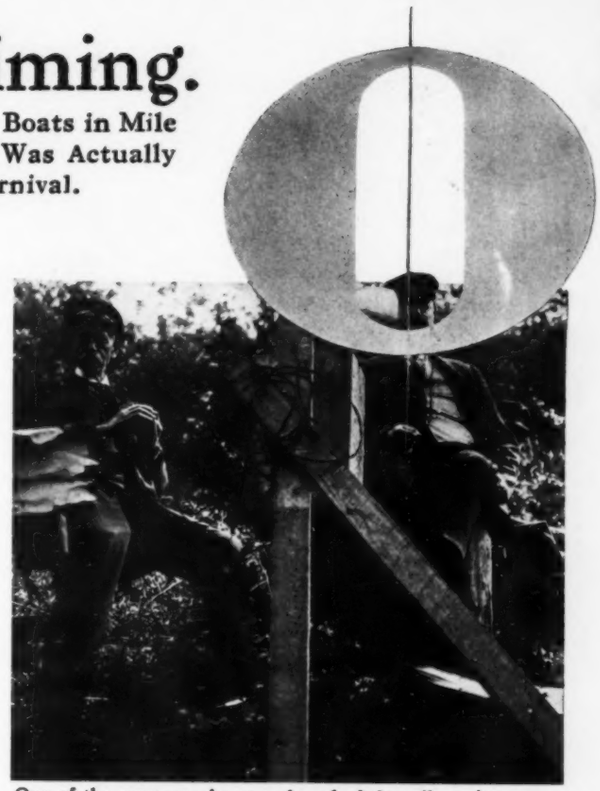
"That's the finish," groaned the chef. "Now we've got to live on crackers and water until this blows over. We can't use the stove without alcohol, and we can't start a fire with wet wood. You" he added witheringly, "must be the guy that put the boo in boob."

(*Continued on page* 50.)

Accurate Speed Timing.

A Method of Correctly Obtaining the Times of Boats in Mile Trials and Computing Their True Speed That Was Actually Used During This Year's National Carnival.

By Chas. F. Chapman.



One of the range marks at each end of the mile as it appears from the water.

OFTEN times one desires to know just what the maximum speed a boat is capable of, and in the trials held to ascertain a racer's greatest possibilities he desires to reduce to a mimimum every external influence that would tend to retard her pace even the smallest fraction of a knot.

Several apparent methods of obtaining this figure immediately present themselves, which however if closely analyzed, develop one fault or another which condemn that particular system. For example, a triangular course might be chosen with its start and finish at the same point, enabling one set of timers to accurately observe the instant that the boat passes that certain point in each direction and from this data to compute her speed. But this method is open to several objections, first the great difficulty that is always met in laying off an absolutely accurate triangular course or obtaining the true length of one already established. Second, the resultant effect that any tide or current has on a boat's true speed, as the more current there is then the slower will be her apparent speed. Third, the effect of the turns which greatly retards all boats for more or less degree.

A course properly surveyed on land is bound to be accurate in its length, and it is generally a simple matter to lay off one in the water which in direction will be parallel to the one on land and one that need not necessarily be of any known or fixed length. Such a course is shown in the diagram; points A, B on land, near the shore line, being exactly one mile apart. To locate these at the exact desired distance from one another does not require the services of a professional engineer either, as it is a simple matter for anyone to measure the distance accurately with a 50 or 100 ft. steel tape, keeping tab carefully of course of the number of lengths of the tape measured off. Directly in front of A and B, some 25 to 50 ft. distant, two other points A′ B′ are located forming right angles with a line from A to B. By erecting a tall stake or post at each of the four points, ranges can be obtained out into the water which will be exactly 1 mile apart and the instant that a boat's bow lines up with the two posts, can be accurately observed by those standing behind at C and D.

An improvement upon relying on lining stakes up for an observation is well shown in the illustrations. This has the two fold advantage of being more readily located by those in the boats and giving somewhat closer accuracy to the timers. It consists of a flat, oval-shaped piece of wood about 3 ft. high by 2 ft. wide with its center sawed out for a width of about one foot and a No. 10 gauge wire dividing the hollow oval down through its center. One of these is nailed to the top of each stake at such a height that a man standing or sitting in an elevated position behind, will sight through the two ovals in front of him covering a field out in the water of a magnitude which will include the course of any boat starting or finishing the mile dash.

Buoys E E′ are located out in deep water and a line between them is parallel to the line A B. These buoys are placed somewhat more than one mile apart and beyond the lines of A A′ and B B′, being used as sights to enable the helmsmen to steer a straight course and know when he has reached the end of the mile without taking his eyes off of his course ahead.

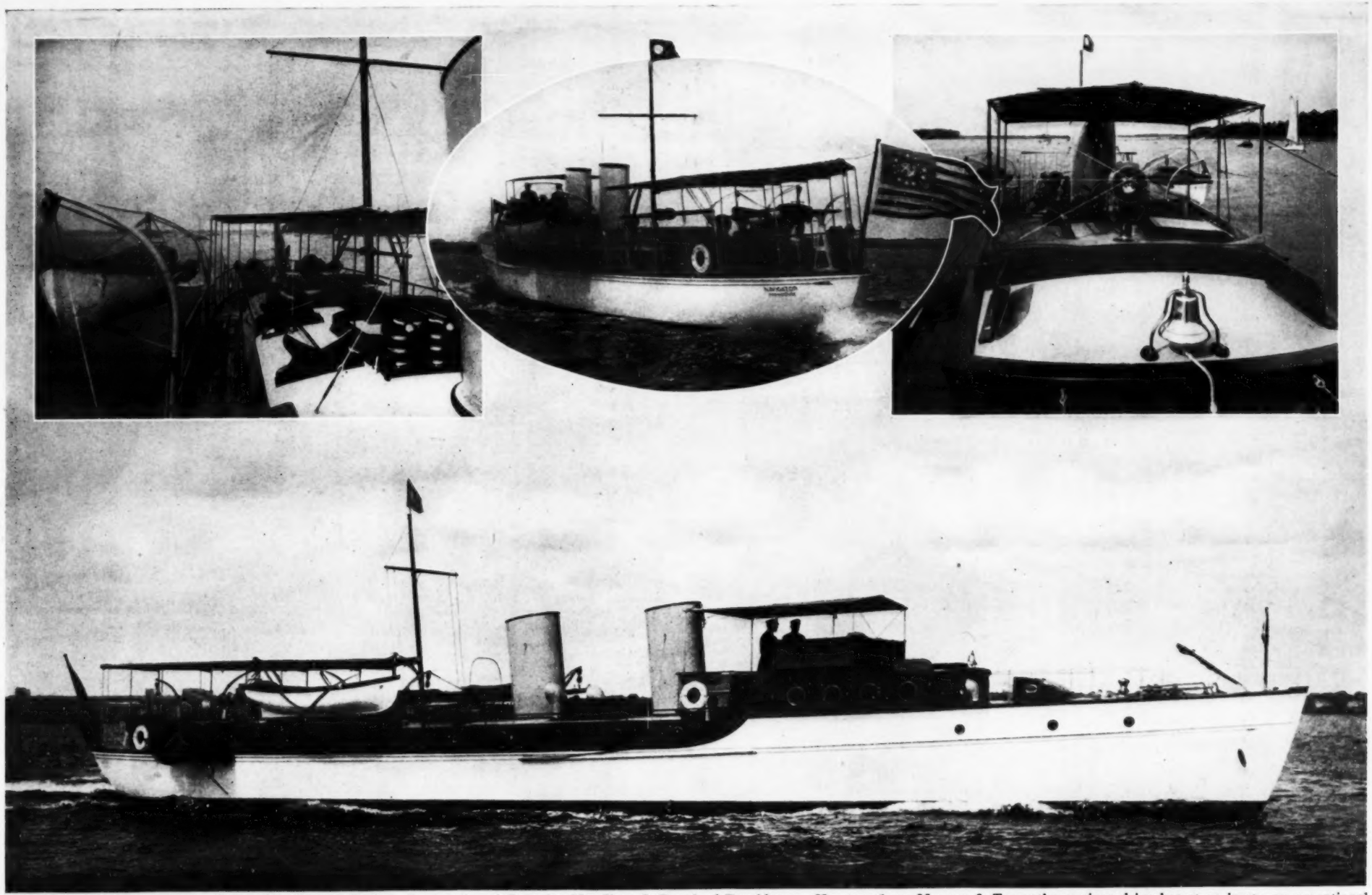
In order to obtain the boat's best speed and counteract any effect of current with this method, it will be necessary for the boat to run in each direction, taking the time that her bow lines up with the observing wires, both at the start and finish of each run. From these may be computed her elapsed time and speed. As a strength the current may be different during the two runs or other influencing factors present, it is best not to rely upon one run in each direction only, but to make as many as three against the current and a like number with it and then compute the average of the speeds for the six runs.

The usual method of timing is to station not less than two timers at both stations C and D with split second stop watches that have been previously synchronized. The crews of the boats have been previously notified that they are to run up and down over the course six times and that their times will be noted by the observers on shore. The timers at C and D note from their stop watches and record the minutes and seconds every time a boat passes in line with the two wires in front of them going in either direction. After the trials are over the four timers get together and compare their notes, and from the times of start and finish of each lap they are able to compute the elapsed time for each. Their watches are also allowed to run on until the conference, when they are again compared, and should any difference between them exist, a correction in the times observed must be made.

This method of timing the boats often leads to a great deal of confusion, both among the timers and between them and

(*Continued on page* 44.)

A range mark from the rear, showing two timers with telephone receivers and transmitter, and clerk recording the results.



The trim 91-footer, Navigator, designed by Messrs. Swasey, Raymond and Page for Mr. Chas. J. Davol, of Providence. Her two 65-75 Murray & Tregurtha engines drive her at 13 knots, an exceptional speed for such moderate power.

NAVIGATOR

A 91-Footer With Moderate Power and Exceptional Speed Designed for General Cruising Along the Atlantic Coast.

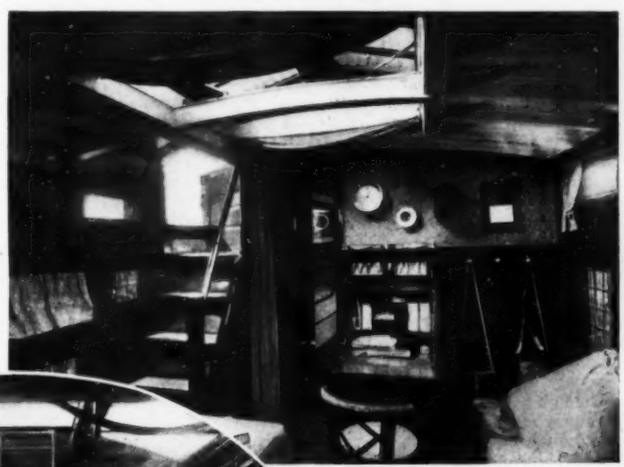
The bridge is well protected by the forward trunk and the spray cloths on the rails.

NAVIGATOR, a medium powered twin screw cruiser, photographs of which are shown upon this and the opposite page, is one of the trimmest craft that have appeared this year. She is from designs by Swasey, Raymond & Page, of Boston, which were published in the February, 1912, issue of MoToR BoatinG, and is owned by Mr. Chas. J. Davol, of Providence, R. I., who uses her for general cruising along the Atlantic Coast.

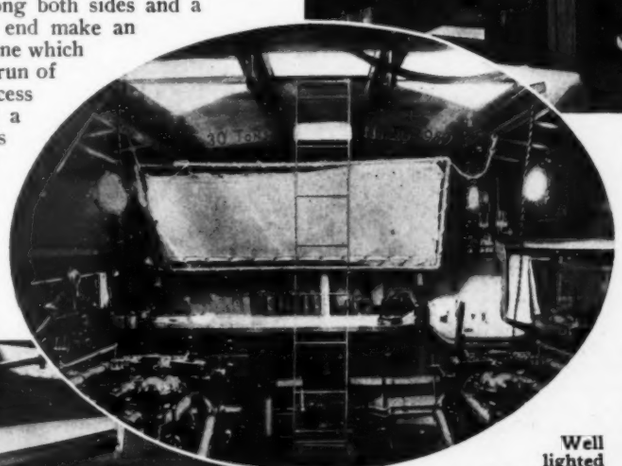
The above and below deck arrangement which the architects have chosen for Navigator, give her the appearance of a much larger yacht than she really is and her engines, with a total of only 125 h.p., drive her at the exceptional cruising speed of 13 knots, making her especially economical to operate from a fuel standpoint. The boat is 91 ft. in overall length by 14 ft. beam, with a draft of 4 ft. 6 in. Two six-cylinder 65-75 h.p. Murray & Tregurtha engines form the power plant. The below deck accommodations include a large forecastle, crew's quarters, engine room, galley, two staterooms, after and forward cabins, dining-room, in addition to the usual toilet and bathroom facilities.

The crew's quarters occupy the forward part of the vessel, with accommodations for four, with ample locker and storage space. Immediately aft of these the forward cabin is located which extends partly above deck and is used as a dining-room. A semi-circular seat at the forward end and extension table in the center, lockers arranged along both sides and a sideboard built in at the after end make an attractive and ideal layout, and one which is a departure from the general run of dining-room arrangements. Access to the bridge is by means of a companionway leading from this cabin and upon the port side a staircase leads down to the galley, which is a few steps below the floor level of the dining salon.

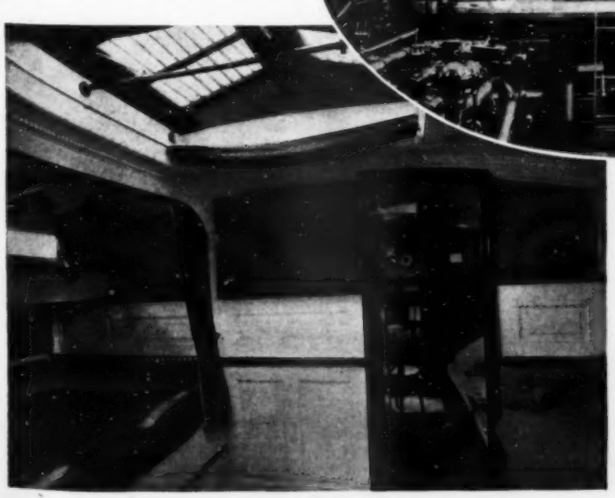
The galley extends the full width of the vessel, being equipped with the usual fittings, such as Shipmate stove, ice-boxes, hot water tanks, etc. Aft of the galley the engine room is located, which contains aside from the two main engines an auxiliary engine, dynamo and extending along both sides two 300-gallon gasoline tanks. Special attention has been given to providing a large amount of locker space in the engine room and these extend along both sides above the gasoline tanks with pipe berth and work bench at the after end of the room. Next aft of the motor room there is a large dressing-room opening from the owner's stateroom, which has large built-in seats, both on the port, starboard and forward sides, in addition to complete fittings. The backs of these seats are removable and they make up into wide comfortable beds.



The after cabin is finished in mahogany and white enamel with silk velour upholstery, wall covering and hangings.



Well lighted and ventilated engine-room with the two six-cylinder 65-75 Murray & Tregurtha engines.



The owner's stateroom is comfortable and beautifully finished without the sacrifice of boaty simplicity.

The guests' stateroom occupies the full width of the boat at the stern, with ample full height clothes lockers. All of the interior decorations have been most carefully planned in order to give an artistic effect, the forward cabin being finished in mahogany and the after quarters in white with tapestry panels, mahogany trim and white ceilings. The guests' stateroom is finished with gold tapestry panels and the owner's stateroom in white with tapestry of old rose. The after cabin, which is designed to give the effect of the wardroom of a large vessel, is very distinctive in type and large enough to accommodate all the guests.

The design of the craft is a good example of the present trend and a complete departure from the old steam yacht practice. It is a combination of the raised deck and trunk cabin types, with a bridge deck aft of the forward deck house. Two stacks give a speedy appearance to the craft. The supply water tanks, one of 150 gallons and one of 180, are placed below the floor aft of the engine room, and still another of 150 gallons capacity is placed under the floor in the forward cabin. Water is pumped from the smaller tank in the stack.

Hauling Out for the Winter

Neat and effective covering and substantial blocking.

Captain Joe Has Something To Say About How the Job Should be Done, With Some Suggestions for Protecting the Boat from Deterioration During the Winter Months.

TO keep his motor craft in the very best possible condition is naturally the aim of every motor boatman, and to accomplish this the boat must be well cared for throughout the entire year. While the little ship is in commission it is generally given every needed attention, but when the boating season comes to an end, and the cold winds from the north sweep over our cruising waters, the owner's enthusiasm is at rather low ebb, and the work of hauling out and wintering is thus often hurriedly undertaken. Because the depreciation of a boat is likely to be greater during the period when it is laid up between seasons, the work required to pull her in snug winter quarters should be thoroughly well done, and the prudent skipper will see that no necessary detail is in any way neglected.

The first point then to be attended to is hauling the boat from the water, and this should be done whether the craft is used in southern or northern waters. The climate of our southern states is, of course, favorable for all the year cruising, but even though the boat is kept in commission practically the whole year, it should be hauled out at least twice every twelvemonth, that the hull may be well dried out, given a good overhauling, and re-painted. Here in the north where the winters are quite severe, the boat must be well protected from ice and snow, and hauling out and some sort of covering is therefore a necessity. Now the work of hauling out a motor boat of reasonable length need not be regarded in the light of a huge job, and providing the skipper has made adequate provisions for doing the work in hand, a solidly built cruiser is not particularly hard to handle, with a good purchase and the assistance of a couple of intelligent helpers. Suppose we consider the best available methods for doing this work both easily and well, beginning with the light, open pleasure craft.

The small launch, dinghy and other lightweight motor craft may be easily hauled out with the help of an extra man. The easiest and simplest way to do this is to lay a track of plank upon some shelving beach or bank, insert rollers beneath the keel and "snake" her up this runway. Four common plank, each about as long as the boat, three or four rollers, and a common three-part tackle (such as used for the throat halyards of a sloop) comprise this simple but efficient outfit. For rollers, one may cut up an old spar into three-foot lengths. Short lengths of iron pipe may also be used, but the diameter of the rollers should not be less than four inches, and six or eight-inch rollers will be found to work much easier. With this cheap outfit and the assistance of a friend to attend to the rollers, the skipper can haul out anything up to thirty feet. In hauling out the boat, the rollers should be so placed that the keel rests upon three of them, and when the one rolls out aft, it should be carried around and placed beneath the bow. By shifting planks and rollers occasionally, but little lumber is required.

It is a comparatively simple matter to haul out the smaller boats in the manner just described, but the heavy-weight cabin cruiser is more of a problem for the amateur to handle. For the larger craft the plank and roller method is, of course, impracticable, because a weight of several tons would cause the rollers to bind and a great deal of power would be required to move the boat at all. To handle a solidly built cruiser, a cradle and grease track are required, and these necessary aids may be easily constructed by any skipper who can handle a few common tools. To make the cradle, which should be put up amply strong to support the weight of your boat, either oak or yellow pine may be used, preferably the latter, on the hand of economy. For a boat of average length the following dimensions will be about right. In making the cradle, two yellow pine stringers, 6 in. x 6 in. and about 10 ft. long, are placed fore and aft, and the 6 x 6 cross pieces solidly bolted at either end. The heads of all bolts should be mortised in and driven in from the under side of the cradle, for this is the runner side, and must be perfectly smooth to slide easily on the track. The long pieces of 3 in. x 6 in. are now bolted from corner to corner of the stringers, making an X brace which will greatly stiffen the side members and prevent the cradle from getting out of square. A third cross piece, 6 in. x 6 in., is now laid across the stringers in the center and securely bolted to both the stringer runners and the X. Three cross pieces will make a sufficiently strong cradle for a thirty-footer, but additional ones may be put in if extra strength is needed. It is not necessary to bolt these extra pieces down, since they are only needed to support the hull; simply nail them in position to prevent floating away when the cradle is sunk. To keep the cradle runners on the track, spike or bolt a piece of 2 in. x 6 in. yellow pine along the runners on the outside, so that the lower edge will project at least two inches below the bottom edge of the runners.

For the track of our improvised marine railway a few 6 in. x 6 in. timbers of yellow pine will be needed. The top and outside edges of these should be smoothed up for the cradle to slide upon. A few old wooden railroad ties will here fit in nicely, or one may press into service almost any old substantial timber for the cross pieces upon which to lay our track. A cross piece or tie should of course be placed where the ends of the rails join, and at intervals along the track to prevent it sagging under the weight of the boat. The wooden rails are easily fastened together by nailing small battens across the butt ends of the rails, taking care, however, to fasten them level with the bottom edges, so that they will not strike the cradle. The cross ties should be placed upon a substantial foundation. If the beach or bank selected for the hauling-out place is level, well and good, but in case it is not, or where the bank is abrupt, the track should be solidly blocked up with stones.

The track should be long enough to reach from water deep enough to float the boat, to the site selected for the winter berth. In tidal waters the lower length of track may be conveniently laid during low tide, and kept from floating away by driving a few short stakes in te bottom, nailing the tops to the outside of the track. In inland waters where the tide cannot be taken advantage of, the lower section of the track must be ballasted to sink it to the bottom. In cases of this sort board up the lower part of the track and ballast with stones.

The motive power required to move the boat may be supplied by tackle purchase and a "crab" or capstan, or a pair of horses may be used. In either case, a bridle of heavy rope or chain should be affixed to the ends of the cradle in which to hook the tackle block. Just before hauling, the wooden track should be well slushed with heavy grease. The cradle—well ballasted with stones or railroad iron—is now run out beneath the hull, and when the power is hooked on, the boat will move easily along the ways.

Having hauled the boat to its winter resting place, the craft should be well blocked up. The keel should not rest upon the ground, but blocked up a foot or so above the surface. Three or four

Hauling the boat out on a simple car rolled up on two skids.

of the railroad ties may be used to good advantage by hollowing out the ground to embed them. It is a good plan to place the ties so that the keel is well supported its whole length. This makes a good, secure foundation upon which the blocking may be solidly placed to keep the boat well above the ground.

To keep the craft on an even keel it should be supported by wedging shores under both bilges. Three pairs of "shore legs" should be used, and almost any odd pieces of stout timber cut to the required length may be pressed into service. A short piece of plank or board should be inserted between the shore and the ground, and another board (covered with several thicknesses of old canvas to prevent gouging the paint) placed between the top of the shore and the hull. The shores may be firmly planted by driving thin wedges between the prop and the plank resting upon the ground.

While the bottom is still wet, any growth or dirt should be removed.

One of the easiest and most practical ways to haul out a small open boat is to back a truck or hay wagon into the water and float the craft directly onto it in a fore and aft position. Some bottoms may not be of such a nature as to allow the use of horses either at high or low tide, if at tidal waters, but this objection can be overcome by backing the wagon in by hand and hauling out with the horses attached by means of a long rope to the wagon and leading to dry land. If the bottom still refuses to allow the wagon to come out with the forces at hand, it will be well to wait until low water, and then build a temporary runway of wide boards for the wheels to run on and thus prevent their sinking in the mud.

Small boats may also be taken up sidewise to advantage. The same sort of skids may be used as for hauling out by the method first described, except that the distance between the skids may have to be varied somewhat to fit the particular boat. Several turns of good, strong line should be placed around the boat, both near the bow and stern and then the loops connected together by a couple of turns of line. Considerable slack should be left in this line, so that the pull will be at right angles to the boat rather than in a fore and aft direction, which would tend to bring the loops together. A line now made fast to the slack loop is led through the system of blocks and falls or to the other motive power for doing the work. The boat will heel on its side, sliding on the bilge, skeg and side of the bow and may be blocked in an upright position upon reaching its final resting place.

Care should be observed, no matter what method of hauling out is followed, that the pull is exerted upon a portion of the boat which has been designed to withstand such. Pulling from a cleat on the deck is mechanically bad, and even Sampson posts have been known to let go and carry half the deck with them. Some owners have a hole in the keel bored all the way through near the bow, which is ordinarily plugged, but as soon as this point is out of the water a bolt is inserted and the pulling lines fastened to this, or sometimes the boat is made fast to the car by this means.

The care that should be expended upon the motor in the fall is just as important an item as that of properly protecting the hull. Of course, the circulating water should all be drained out through the cocks provided for that purpose; in fact, this might well be done after each time the engine is used in the late fall before hauling out, as the early frosts are likely to catch one unawares. It is well to shut off the intake valve a few minutes before stopping the motor and open the drain cock to allow the jacket to thoroughly dry out. If water under pressure is available from a tap near by, it is an excellent plan to flush out the jacket for several minutes with this, following it by pouring a pint or so of lubricating oil in at the highest point.

If the cylinder heads are of the removable kind these should be removed and the walls of the cylinder thoroughly cleaned of any carbon deposit, by the liberal use of kerosene. Great precaution, however, should be used to remove every trace of kerosene, as it is a more powerful oxydizing agent than water itself, and it is apt to have the metal in a very rusty condition before spring rolls around. Next pour a gill or so of cylinder oil into the top of the cylinder, revolving the fly-wheel a few times; thoroughly spread this on the walls. If the cylinder heads cannot be removed, apply the same treatment through the spark plug holes or pet cocks.

The base of the engine should be cleaned of any oil or residue and then partially filled with oil, taking care to have the crankshafts and pins well saturated.

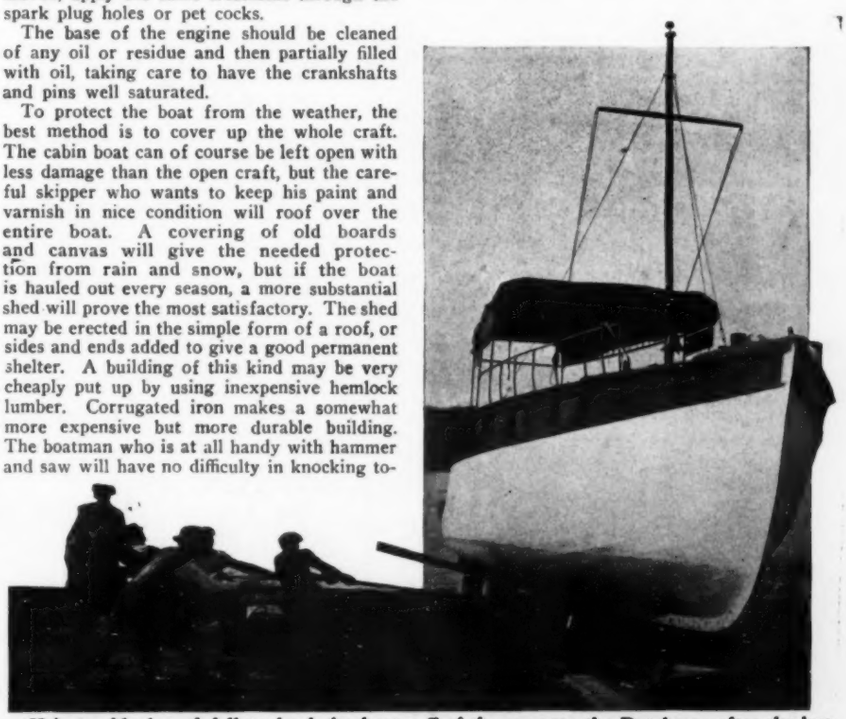
To protect the boat from the weather, the best method is to cover up the whole craft. The cabin boat can of course be left open with less damage than the open craft, but the careful skipper who wants to keep his paint and varnish in nice condition will roof over the entire boat. A covering of old boards and canvas will give the needed protection from rain and snow, but if the boat is hauled out every season, a more substantial shed will prove the most satisfactory. The shed may be erected in the simple form of a roof, or sides and ends added to give a good permanent shelter. A building of this kind may be very cheaply put up by using inexpensive hemlock lumber. Corrugated iron makes a somewhat more expensive but more durable building. The boatman who is at all handy with hammer and saw will have no difficulty in knocking together a good solid building of this kind. It is a good plan to make the roof with a good pitch, and high enough to give a fair-sized airspace over the boat. Room enough for an alley-way should be allowed for around the whole boat, and a space for a small work bench will be found very useful. Housing the boat in a substantial house of this description is the best kind of insurance, and has this advantage, that the skipper can "tinker" whenever he feels like doing things with his hands.

The boat should be stripped when it is taken out of commission, and everything of value removed and safely stored away. A boat house seems to have an overpowering fascination for prowling characters, and a padlock should not be deemed unpickable. Another thing to do is to clean up the interior of the ship and throw out all odds and ends of worthless truck, which somehow or other succeeds in accumulating at the tag end of the season. Floor boards, lockers, portlights, etc., should be opened to let the air circulate through the whole boat down to the bilge. This will prevent sweating during the winter and do away with the usual musty smell.

If your boat is insured—and every boat of value should be thus protected, don't forget to drain the fuel tank and remove the gasoline from the premises. While attending to the other small jobs, do not forget the storage battery. A battery may be put in condition for stowing away by fully charging it to take up the free sulphate. Test the electrolite for density, and make it a point to ascertain that the plates are covered.

Of course such bright work on the engine that can be easily removed from the engine should be and then stored in a safe and dry place and those parts that cannot be removed should be thoroughly smeared with grease. If the boat is stored in a place where thieves are apt to break through and steal, it is best to remove such temptations as carbureter, searchlight, whistle, steering wheel, etc., as old brass brings in a goodly sum these days.

Tiller lines should be carefully examined for weak spots, and if any whatsoever even appear discard the line by all means. The life of such an important part of the boat's anatomy is very short at its best and it is ill economy to try to save on this score. At any rate remove them for the winter, as they are always in the way when spring fitting-out time comes and the acid in the varnish remover is sure to come in contact with and eat into them.



Using a block and fall to haul the boat off of the car onto the Dutchman after she has reached the top of the bank.

Auxiliary sloop under way with ensign at gaff end and private signal at mast head.

Dinghy with owner on board flying private signal from bow and ensign from stern staff.

Open boats on a club run fly the club signal and ensign.

Auxiliary sloop at anchor with club and absent flags and with ensign at stern staff.

Cruiser with bow and stern staffs flying club signal and ensign when at anchor.

Auxiliary schooner at anchor with union jack, club and signal officer's flag and ensign.

Flags and Colors; Whe

As a yacht is known by the flag she flies, we are afraid that the majority of motor boats to-day have a rather bad name. There is nothing that gives a poorer impression to those who really know than to observe the mis-use of flags and colors. A visiting yacht is immediately sized up when she enters the anchorage of the club where she intends to spend the night or a few days by just these little

FLAG	WHEN FLOWN	OPEN BOATS WITH BOW & STERN STAFFS	BOATS WITH BOW STERN & SIGNAL MASTS
ENSIGN RECTANGULAR	8A.M. to Sundown	Stern	Stern
CLUB PENNANT TRIANGULAR	8A.M. to Sundown	Bow when at anchor	Bow
PRIVATE SIGNAL GENERALLY SWALLOW-TAIL SOMETIMES RECTANGULAR	8A.M. to Sundown	Bow when under way	Mast head
FLAG OFFICERS RECTANGULAR	Day and Night		Mast head
UNION JACK RECTANGULAR	Sundays & Holidays 8A.M. to Sundown When at anchor only	In place of club pennant	In place of club pennant
NIGHT PENNANT TRIANGULAR	Sundown to 8A.M.		Mast head
ABSENT FLAG BLUE RECTANGULAR	From daylight to dark during absence of owner from Yacht		Star board yard arm or spreader
MEAL FLAG WHITE RECTANGULAR	During meal hours of owner during daylight when at anchor		Star board yard arm or spreader
CREWS MEAL FLAG RED TRIANGULAR	During meal hours of crew when at anchor		Port yard arm or spreader
WATER FLAG RECTANGULAR	Displayed during daylight — from		
GUEST FLAG RECTANGULAR			Star board yard arm

● An auxilliary yawl may also be considered a schooner

and Where to Fly Them.

things. Such errors are not restricted to the ordinary members either, for flag officers are often as great offenders as any. The rules are very simple and clearly shown in the chart below. Above all never fly more than one flag from the same hoist or a flag with a name spelled out thereon; this is a most terrible breach of etiquette, for which there is no excuse.—EDITOR.

AUXILLIARY SLOOPS	AUX. SCHOONERS AND BOATS WITH TWO MASTS	AUXILLIARY YAWLS *	DINGHIES
Stern at anchor, gaff end or stern when under way	Stern at anchor gaff end or stern when under way	Mizzen Mast head	Stern when at gangway or away from yacht
Mast head when at anchor	Fore mast head	Main mast head when at anchor	At bow when club member and not owner is aboard
Masthead when under way	Main mast head	Main mast head when under way	At bow when owner is aboard
Mast head	Main mast head	Main mast head	At bow when owner is a Flag officer and on board
	Bow staff		
Mast head	Main mast head	Main mast head	
Starboard yard arm or spreader	Starboard main spreader	Starboard main spreader	
Starboard yard arm or spreader	Starboard main spreader	Starboard main spreader	
	Port fore spreader	Port main Spreader	
any part of the yacht			
Starboard yard arm	Starboard main spreader	Starboard main spreader	

and flags displayed as on latter vessel.

The guest flag is flown from the starboard yard arm. Club and private signals with ensign are also proper on a boat of this type.

Between sunset and 8 A. M., boats should display the night pennant at the main mast head.

Boat with signal mast, bow and stern staffs flying club and officers' flags and ensign.

Auxiliary cat boat at anchor with officer's flag at mast head and ensign at stern.

Boats of this rig fly the club signal from the main mast head, private signal from the mizzen mast head and ensign from the stern staff.

NEW MOTOR BOAT DESIGNS

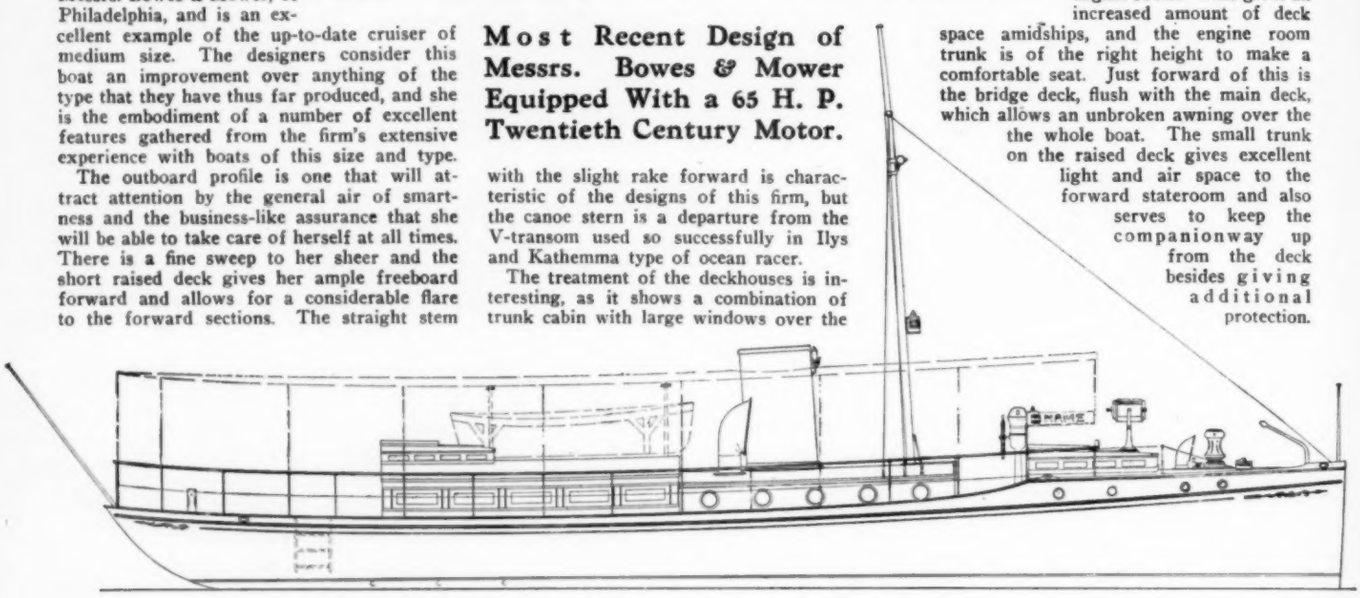
A Trim 57-Footer.

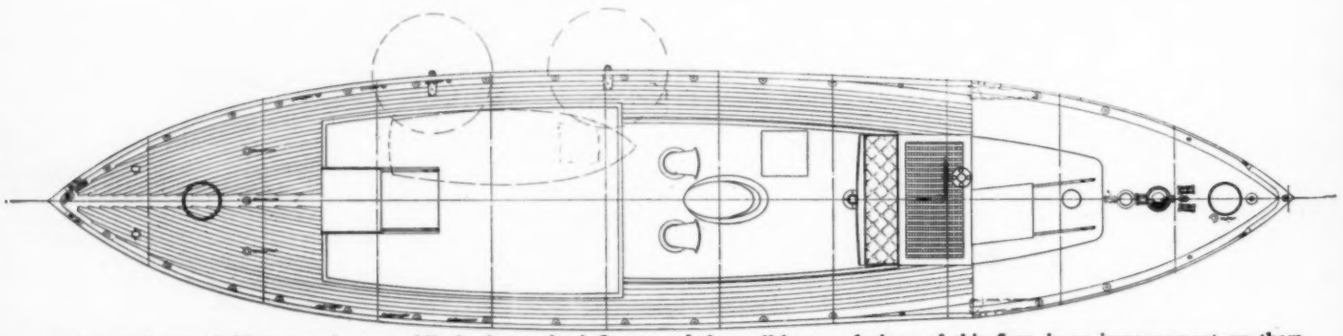
Most Recent Design of Messrs. Bowes & Mower Equipped With a 65 H. P. Twentieth Century Motor.

THE design below is one of the latest from the office of Messrs. Bowes & Mower, of Philadelphia, and is an excellent example of the up-to-date cruiser of medium size. The designers consider this boat an improvement over anything of the type that they have thus far produced, and she is the embodiment of a number of excellent features gathered from the firm's extensive experience with boats of this size and type.

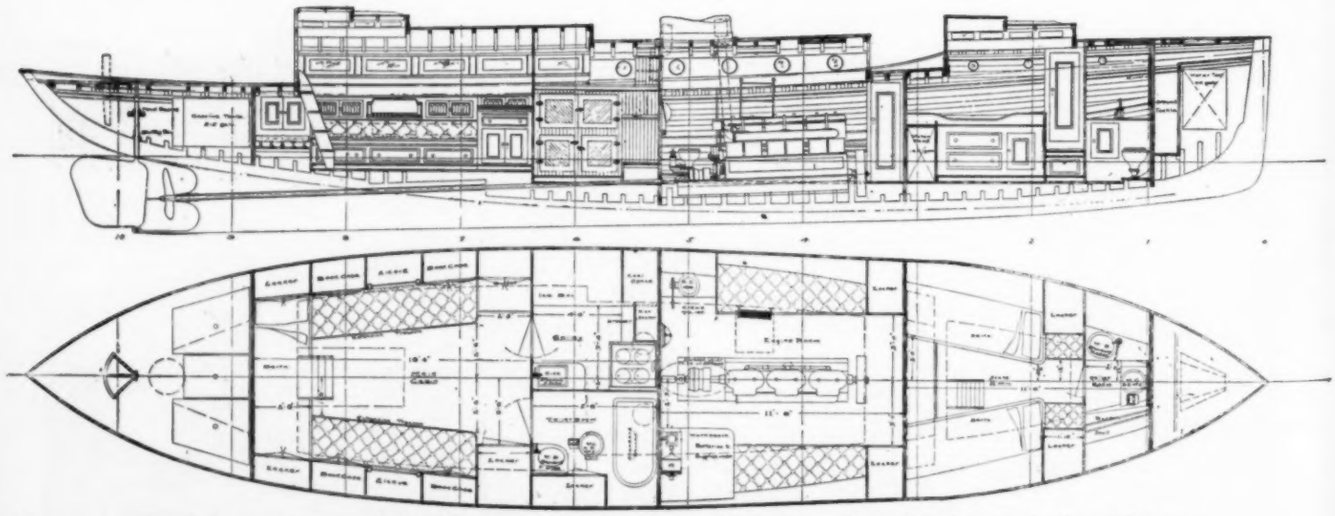
The outboard profile is one that will attract attention by the general air of smartness and the business-like assurance that she will be able to take care of herself at all times. There is a fine sweep to her sheer and the short raised deck gives her ample freeboard forward and allows for a considerable flare to the forward sections. The straight stem with the slight rake forward is characteristic of the designs of this firm, but the canoe stern is a departure from the V-transom used so successfully in Ilys and Kathemma type of ocean racer.

The treatment of the deckhouses is interesting, as it shows a combination of trunk cabin with large windows over the after living quarters, with a lower and narrower trunk with round ports over the engine room. This gives an increased amount of deck space amidships, and the engine room trunk is of the right height to make a comfortable seat. Just forward of this is the bridge deck, flush with the main deck, which allows an unbroken awning over the the whole boat. The small trunk on the raised deck gives excellent light and air space to the forward stateroom and also serves to keep the companionway up from the deck besides giving additional protection.

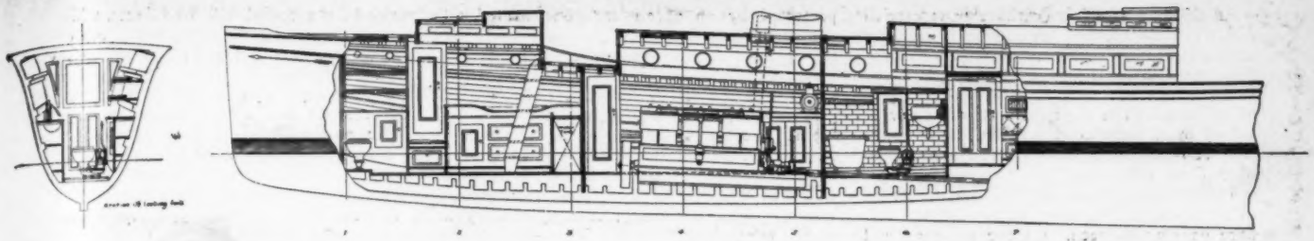




The new Bowes & Mower 57-footer, while it shows the influence of the well-known designs of this firm, is an improvement on them.



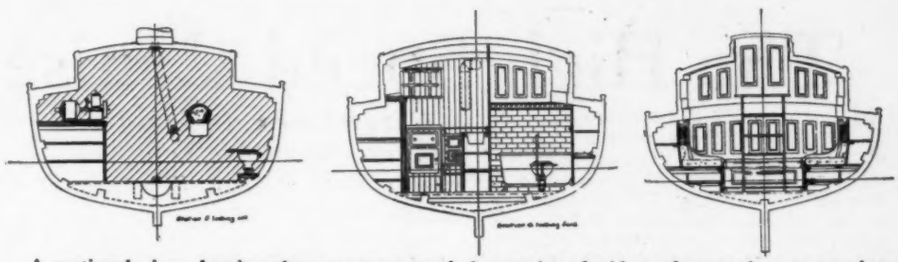
The living quarters are divided into two separate sections with accommodation for the crew in the engine room.



to the man at the wheel. The stack is not used for appearance only, as it is utilized for the engine exhaust, the galley stove pipe, and more important still, for ventilating the engine room. The side decks are 18 inches wide at either side of the cabin, and over 2 feet abreast the engine room trunk.

The arrangement below decks shows a practical working out of the problem of utilizing every inch of available space to the best advantage. A proper placing of the weights requires that the engine be somewhere near amidships, and in this case it is just forward of the mid position with the gasoline tanks installed beneath the flush deck aft to preserve the trim. The engine room is 11 feet long and is between two double water tight bulkheads built of two thicknesses of wood laid diagonally, with canvas and asbestos between, making them sound proof and practically fireproof.

The main cabin is aft, reached by a companionway from the flush deck and is 12′ 6″ long. On either side there are wide transoms of the extension type with alcoves and book cases back of them and under the after deck is a berth running athwartship. This allows keeping the berth made up at all times and when not in use, it is an excellent place to stow hand baggage and the like. At the forward end are a locker and buffet on opposite sides. The galley opens from the main cabin and is entirely cut off from the engine room and the toilet room occupies a corresponding space on the starboard side of the boat and is equipped with a bath tub besides the usual fixtures to complete the equipment of the room.



A sectional view showing the arrangement of the starboard side and several cross sections which give a good idea of the boat's underbody.

The forward stateroom is reached by a companionway from the bridge deck and is fitted with a berth on either side and a separate toilet room forward. This arrangement gives two separate cabins, insuring privacy, which is so often lacking.

The paid hand sleeps in the engine room which is provided with two berths, in case an extra hand is required.

The motor is a six-cylinder Twentieth Century developing 65 h.p. at 450 r.p.m. The cylinders are 6½″ x 8½″ and a speed of over 13 miles is expected. The boat will be lighted throughout by electricity and a small anxiliary generating outfit is provided for this purpose. There are three separate gasoline tanks with a total capacity of 315 gallons installed under the after flush deck with pans beneath them draining overboard. The water tanks have a capacity of 220 gallons and one is installed in the fore peak and the other under the bridge deck.

As to the lines of the boat, the midship section shows the good straight floor with fair dead rise and a firm bilge that will give the necessary stability and yet allow the boat to roll easily in a sea. The fore foot has been cut away to improve the handling of the boat and her steering in a following sea. The dead wood aft is cut away to allow a clear flow of water to the propeller, although there is a skeg to support the heel of the rudder and protect the propeller in the event of grounding. Withal, the boat is similar in general form to Dream and Kathemma, the Bermuda racers, designed by this firm.

The new boat is in the course of construction under the personal direction of her owner, Mr. Edwin Binney, at Sound Beach, Conn., and will be launched early this month proceeding immediately to Florida for the winter. The dimensions are:

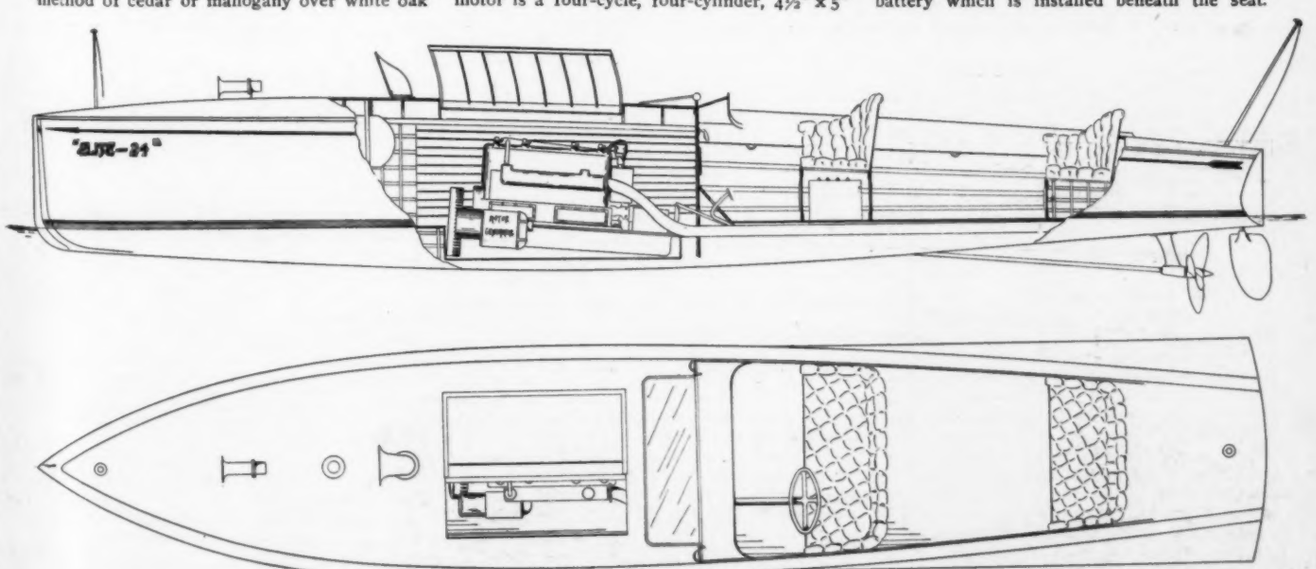
Length over all, 57′; length on waterline, 51′ 6″; beam extreme, 12′; beam on waterline, 11′ 6″; draft extreme, 3′ 7″.

Elite-24.

The Design of a Stock Runabout for 1913.

THE design below will be known as Elite-24, and it is to be used as a stock model by H. B. Pickering & Company, of Ann Arbor, Mich. In planning the boat the requirements of the average boat owner, speed, seaworthiness, comfort, and trim appearance, were taken into consideration, and the boat is a well rounded combination of these qualities.

The hull is built on the rib and carvel method of cedar or mahogany over white oak frames, and all the fastenings are of bronze and copper. The finish is in mahogany. The motor is a four-cycle, four-cylinder, 4½″ x 5″ model, developing 30 horsepower. It is supported on long timbers notched into deep web frames, eliminating vibration almost entirely. An electric "motor-generator" is fastened to the engine frame and so arranged that a slight pressure of the pedal will start the engine without cranking, and when the engine has been started, it in turn drives the machine as a generator charging the storage battery which is installed beneath the seat.



Elite-24 will be used as a stock model for 1913 by H. P. Pickering & Company and is provided with a number of novel features

All flooding from the carbureter is carried directly outboard, and the engine is set in a deep copper pan. The exhaust is carried to the stern through copper tubing, and the seamless gasoline tank is hung just forward of the motor. The engine compartment is ventilated by a large cowl and the hatch above it is self-locking, seating on felt and rubber over deep waterways.

The operating bulkhead is so constructed as to be sound proof, being in two parts, with fibre packing between. On the bulkhead and protected by an apron are concentrated all the controlling devices within easy reach of the wheel. A neat vanometer indicates the level of the gasoline, and there is also an oil pressure gauge and tachometer. The reverse gear is operated by pedals.

The side lights are set in flush with the cross coaming, adding considerably to the trim appearance of the boat, and there is a watertight plug forward for a searchlight connection. The after light is supported by a nickel, telescoping flagpole. The engine compartment is supplied with two lights, while the cockpit has four glow lights under the coaming, to facilitate getting in and out at night, another excellent feature. The fixed cross seats are deeply upholstered, as in automobile practice, and low wicker chairs are supplied for extra seating.

Elite-24, is 24 feet over all by 4 feet 6 inch beam, carries six passengers, and has a guaranteed speed of 20 miles an hour.

A stock model of this type should make a very popular yacht tender.

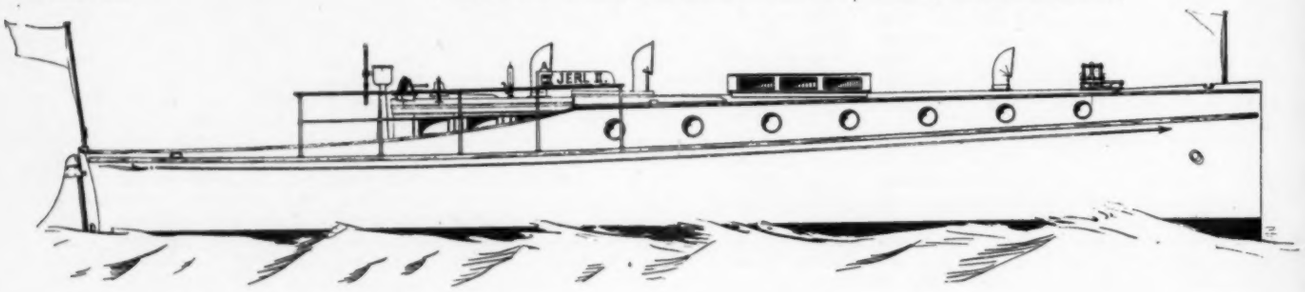
The High Speed Cruiser, Jerl II.

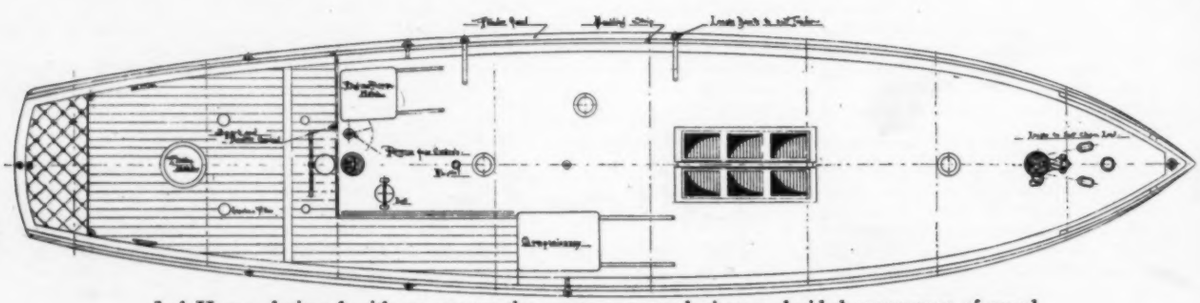
A Fast 42-Footer, Designed by J. Murray Watts and Equipped With a 40 H. P. Lamb Engine.

JERL II is a 42-foot high-speed cruiser, designed by J. Murray Watts, of Philadelphia, for Mr. A. F. Wolf, and now nearing completion at the yard of the Southern Boat Building Company. The new boat is to be equipped with a six-cylinder 40 h.p. Lamb motor, with which she is expected to make 17 miles an hour, and Mr. Wolf intends entering the boat in a number of cruising races. Her dimensions are 42 feet over all, 40 feet 8 inches waterline, 8 feet beam, and 2 feet 8 inches draft.

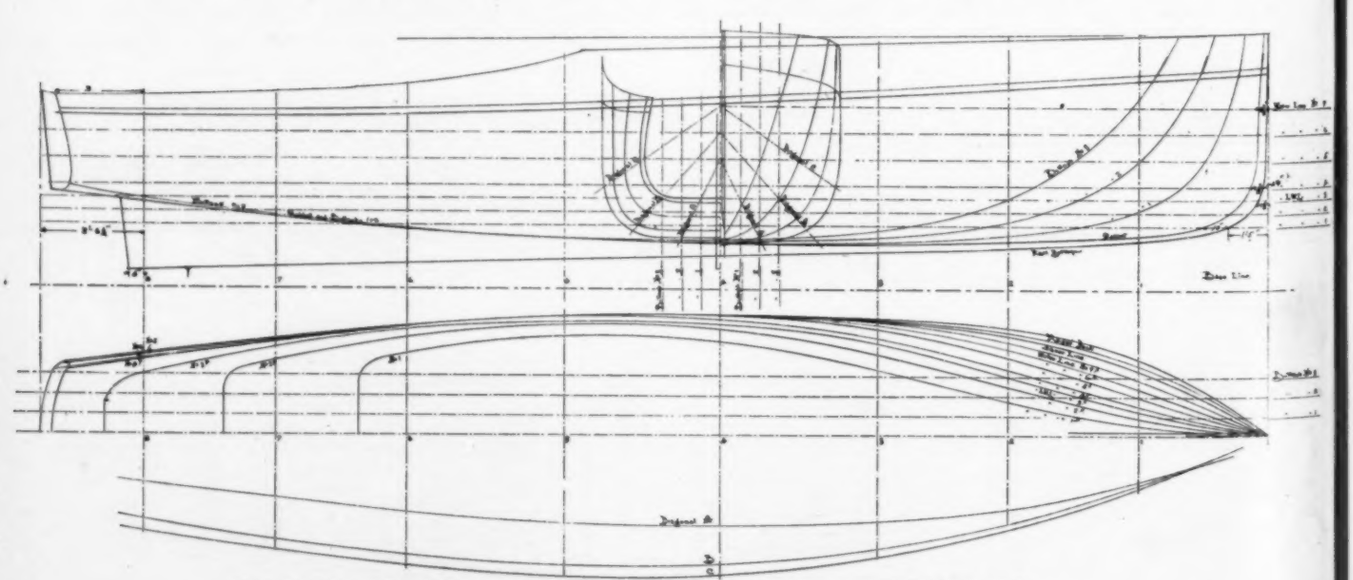
It will be seen from the design that the boat is of the raised deck type with a cockpit aft. She will be steered and controlled from the bridge, which is in close touch with the engine room through a hatch to port. There is a flush deck to starboard, leading to the main companionway amidships, which leads by a curved staircase to the main cabin, a room 15 feet long with transoms, berths and one Pullman berth furnishing sleeping accommodations for three people. The toilet room is forward, and the galley is aft of this main saloon, and in the engine room there is a pipe berth and a transom locker for the crew.

The main saloon is finished entirely in paneled mahogany and the toilet room in white enamel and tiling. The engine room and galley are staved and painted.

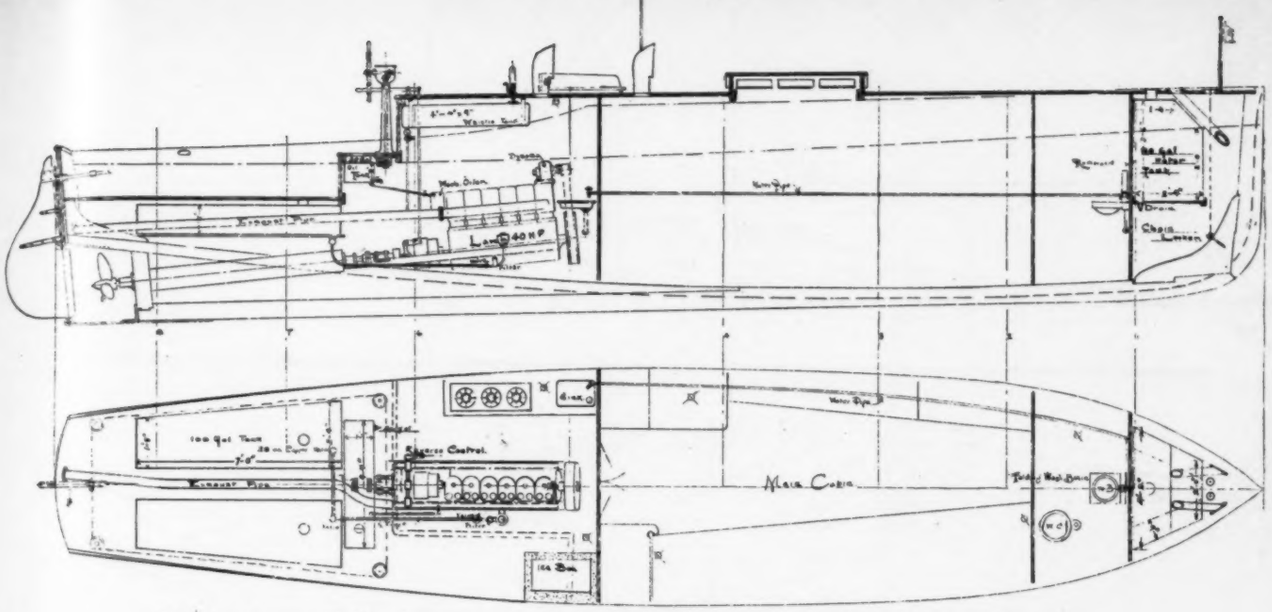




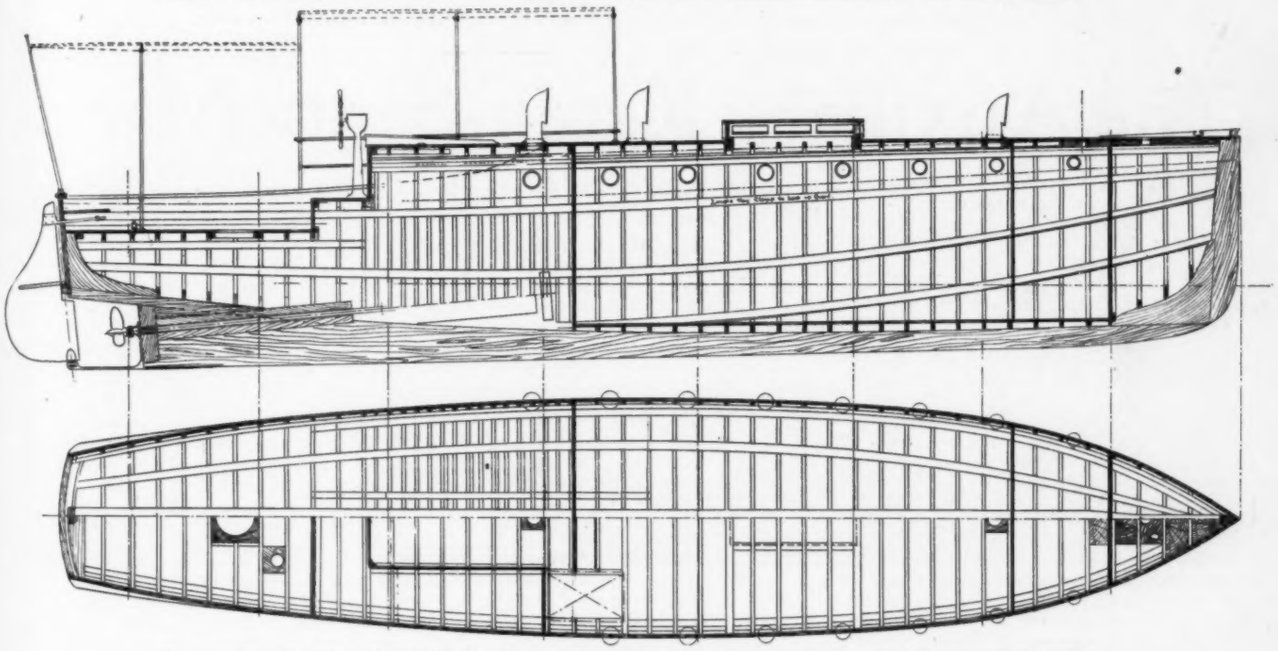
Jerl II was designed with an eye on the ocean races and gives a decided appearance of speed.



The fine forward sections and flat easy run should make her an easily driven craft.



The boat is controlled by the man at the wheel, who is in easy communication with the engine room.



The construction plan of Jerl II showing the closer spacing of the frames at the engine compartment.

In view of the fact that her owner intends entering her in many long distance races, the fuel capacity is very large for a boat of the size, there being two gasoline tanks of 100 gallons each under the cockpit floor, and a lubricating oil tank besides holding half a barrel.

A glance at the lines will give a comprehensive idea of the model of the hull, which has fine waterlines forward, with an easy, rather flat run, and a keel extending the entire length of the boat. The stem is plumb, and the stern is of the raking transom type, with an outboard rudder. Jerl II bears out in her appearance the prediction of the exceptional speed expected of her.

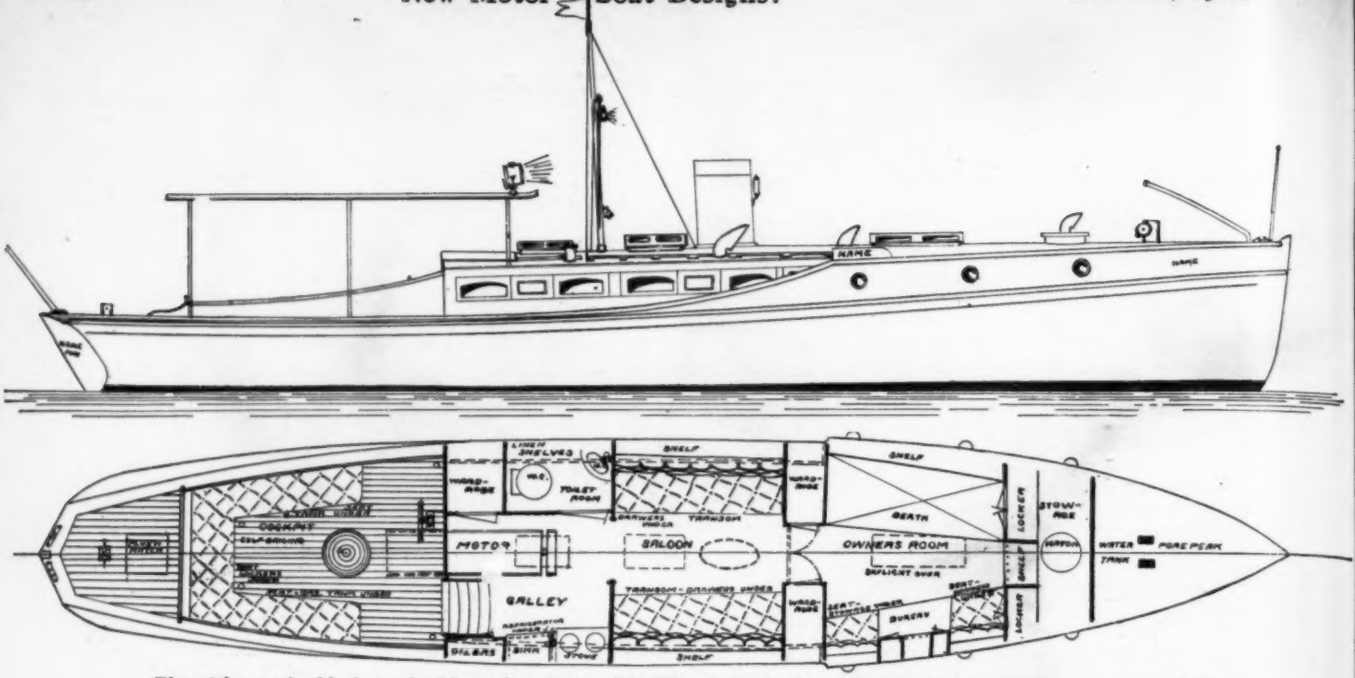
Another Fast 46-Footer.

An All Round Raised Deck-Trunk Cabin Cruiser, Designed by Wm. J. Deed, Jr.

WM. J. DEED, JR., of Boston, has recently completed the design for a fast cruiser with excellent accommodations, the design of which appears on the following page. The boat is 46 feet over all, 35′ 2″ on the waterline, with 8′ 6″ beam and 3′ 3″ draft. She has a cruising radius of 500 miles at a speed of 11 miles per hour, and can make 14 miles when pushed. There is lots of room both above and below decks with 5′ 10″ headroom in the cabin, and all of these qualities have made this type of boat a popular one.

The cockpit is 9 feet long with seats across the after end and along the sides, under which are 100 gallon cylindrical gasoline tanks installed so as to drain through the cockpit scuppers. The boat is controlled from the bulkhead just forward of which the motor is installed. This is a six-cylinder, 5½″ x 6½″, four-cycle machine, developing 54 h.p. at 600 revolutions, and weighing 1,950 pounds. The motor compartment is 6 feet long and on the port side are a wardrobe and toilet room with the galley at the foot of the companion steps to starboard. Amidships is the main saloon 6′ 2″ long with extension transoms, and forward of this is the owner's private stateroom, 9 feet in length. On the port side of this room is a high berth with drawers beneath it, and on the starboard side is a bureau with a seat on either side of it. This room is equipped also with a number of large lockers and a writing desk, and just forward of it is a storage room.

The owner's room is finished in mahogany with flat, white panels and blue upholstery with lighter blue hangings, and the finish of the saloon in mahogany with golden brown tapestry panels, the hangings and upholstery being of old gold and brown.



The 46-foot, raiseddeck-trunkcabin cruiser designed by Wm. J. Deed, Jr., of Boston, is intended for general cruising.

The Auxiliary Ketch, Santa Maria.

An Excellent 30-Footer of the Double Cabin Type Provided with an Auxiliary Ketch Rig.

A VERY interesting little 30-footer, shown on this and the following pages, was designed some time ago by Arthur P. Homer, of Boston, and built by the Bath Marine Construction Company, for Dr. W. S. Dennett, New York. She is of the double cabin type with the cockpit amidships and for boats of this size or larger, this arrangement is excellent, as it not only isolates the engine from the living quarters, but provides a much more convenient place from which to handle the boat.

Santa Maria is 30 feet over all by 7′ 8″ beam and 3′ 6″ draft. It will be seen from the sections and lines that the deadrise is exceptional and should make for seaworthiness. Bilge keels are provided to prevent excessive rolling, to say nothing of protecting the boat from rocks in grounding.

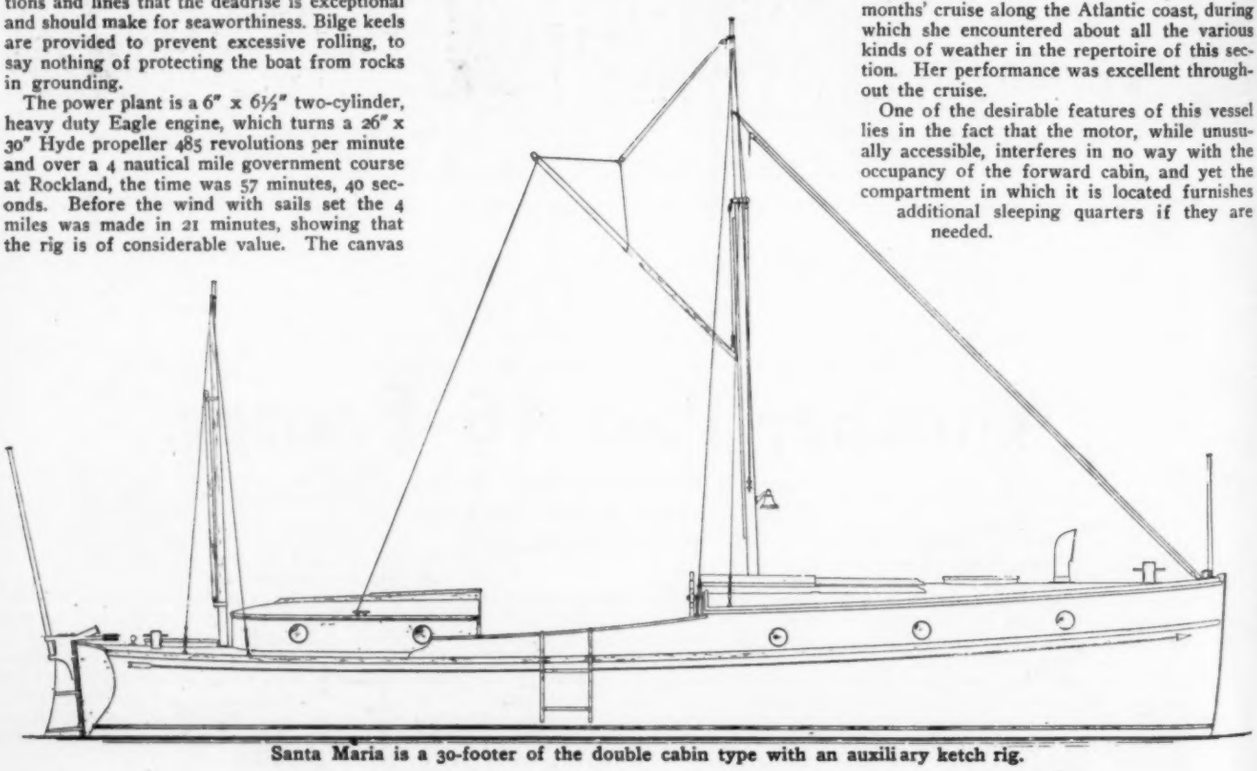
The power plant is a 6″ x 6½″ two-cylinder, heavy duty Eagle engine, which turns a 26″ x 30″ Hyde propeller 485 revolutions per minute and over a 4 nautical mile government course at Rockland, the time was 57 minutes, 40 seconds. Before the wind with sails set the 4 miles was made in 21 minutes, showing that the rig is of considerable value. The canvas ordinarily, however, is used not so much to increase the speed as to steady the boat in a quartering sea.

The cruising capacity of the boat is excellent as she carries sufficient gasoline for 350 miles and is equipped with a 60-gallon water tank and an ice chest holding enough ice to last a week.

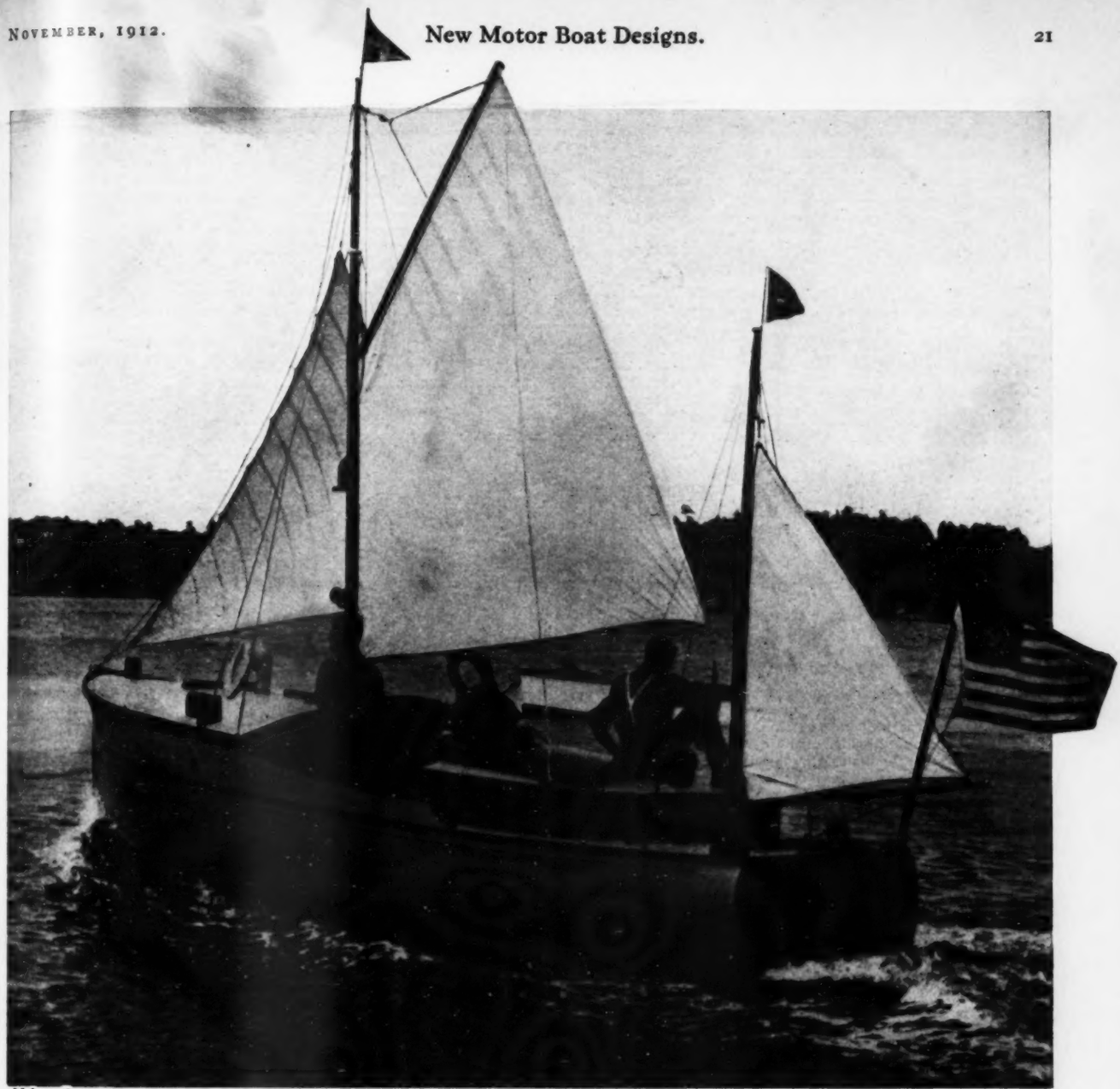
The arrangement below decks consists of an enclosed toilet room forward with the galley and sideboard on opposite sides of the boat just aft. The remainder of the space forward is devoted to a large saloon with transom berths on either side. The space beneath the cockpit floor is occupied by the ice box and fuel tanks, both of which fill through openings in the floor. The engine is installed under the trunk in the after compartment, which is equipped with additional transoms. A hatch in the after deck gives access to the lazarette, the quadrant and lines being on deck for easy inspection.

Santa Maria was tried out recently on a four months' cruise along the Atlantic coast, during which she encountered about all the various kinds of weather in the repertoire of this section. Her performance was excellent throughout the cruise.

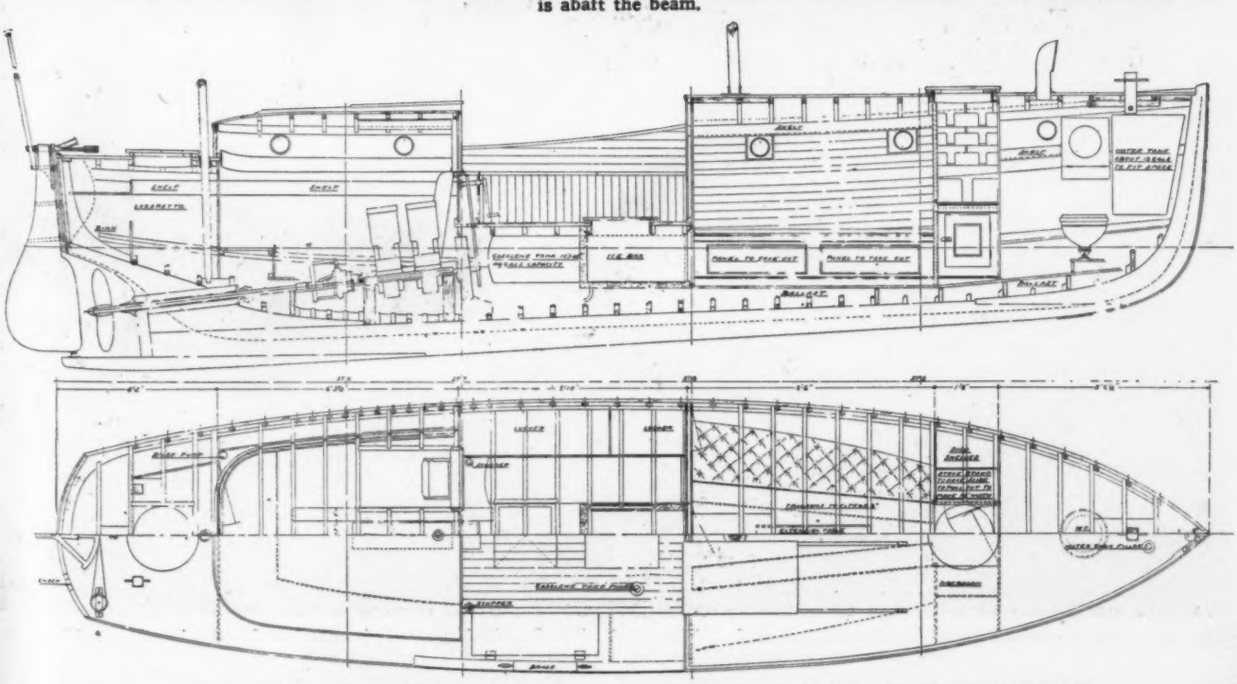
One of the desirable features of this vessel lies in the fact that the motor, while unusually accessible, interferes in no way with the occupancy of the forward cabin, and yet the compartment in which it is located furnishes additional sleeping quarters if they are needed.



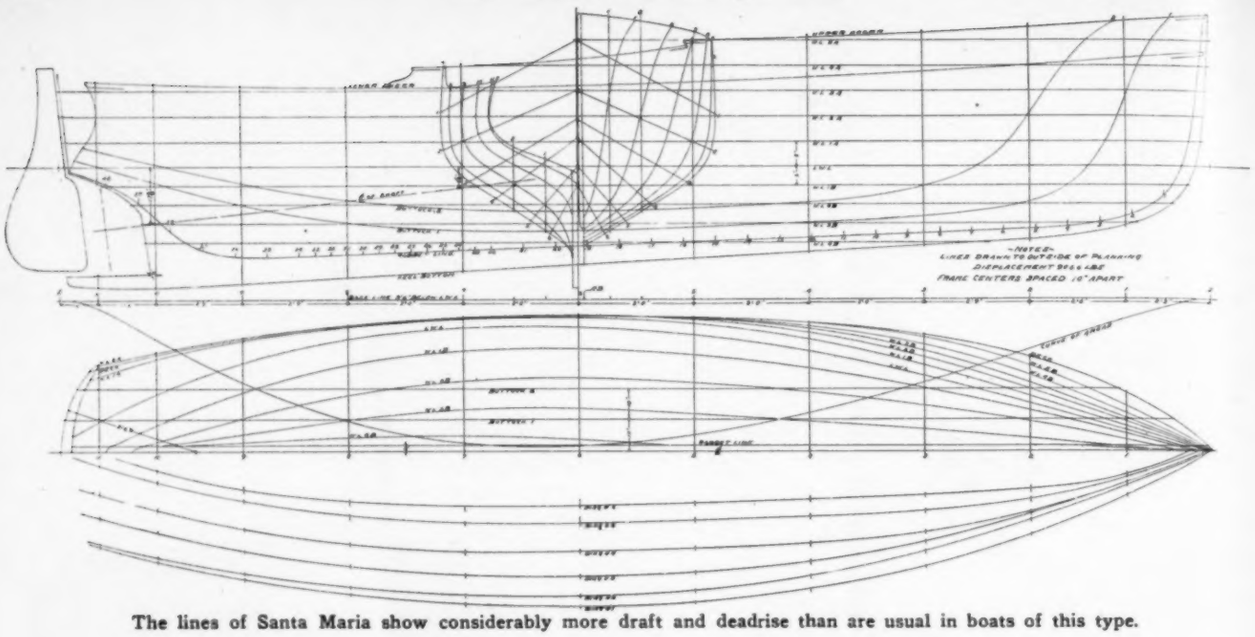
Santa Maria is a 30-footer of the double cabin type with an auxiliary ketch rig.



Although used principally to steady the boat in a quartering sea, the rig is sufficient to add considerably to her speed when the wind is abaft the beam.



The motor, a 6" x 6½" two-cylinder, heavy duty Eagle, is installed in the after compartment.



The lines of Santa Maria show considerably more draft and deadrise than are usual in boats of this type.

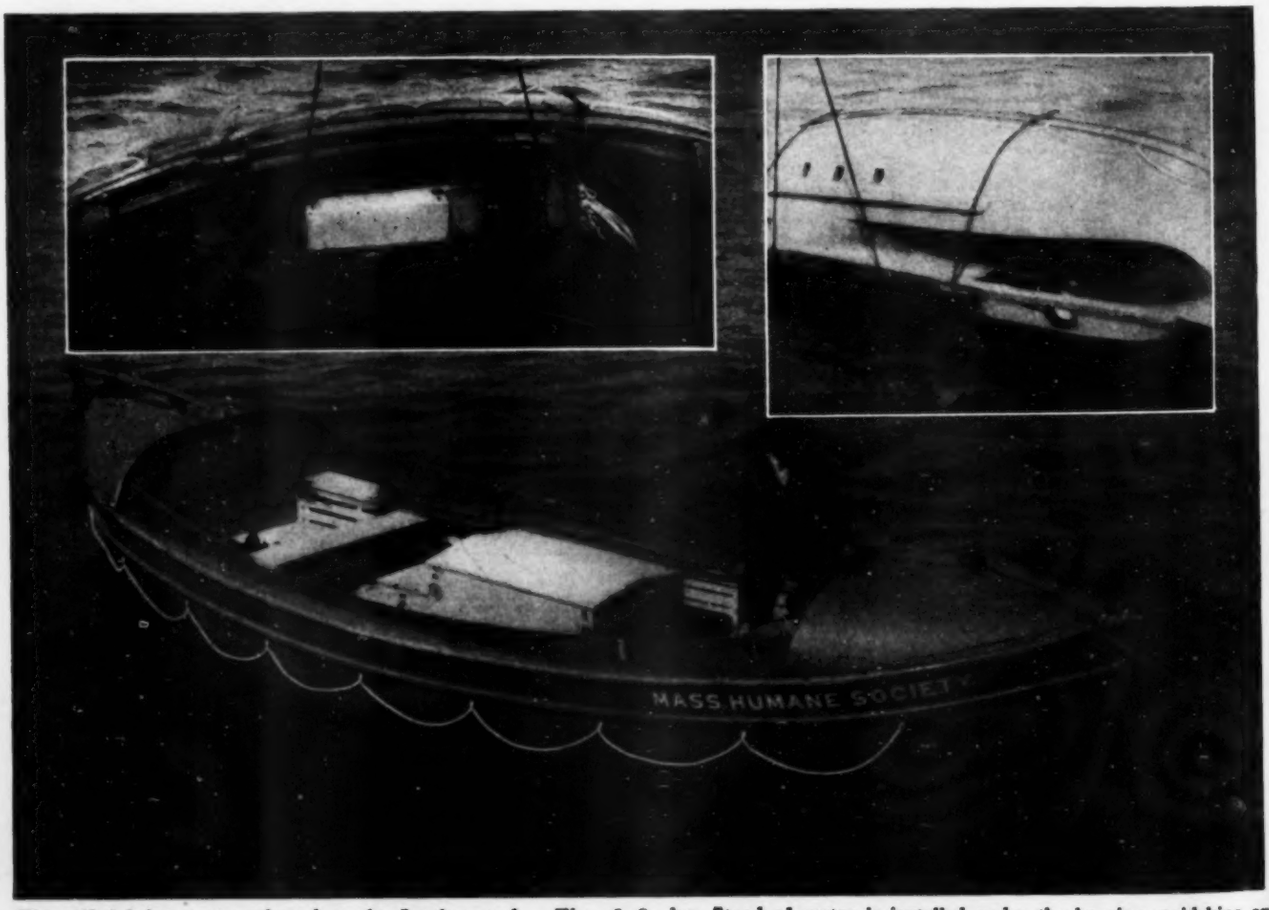
A New Motor Life Boat.

Designed for the Massachusetts Humane Society by Arthur Binney and Equipped with a Heavy Duty Standard Motor.

THOSE who have ever seen a lifeboat launched in heavy weather, can appreciate the difficulties with which these little craft are confronted, and the severe test to which both the hull and motor are subjected. The photographs shown herewith are of the righting test of the new motor lifeboat, designed by Arthur Binney, for the Massachusetts Humane Society, and powered with a slow speed, heavy duty Standard motor.

The photographs give a comprehensive idea of the form of the hull, which is of the double bottom, self-righting type, with the motor installed under a housing amidships. The decks forward and aft are raised not only for protection from seas, but to furnish sufficient buoyancy to right the boat when capsized. One of the pictures shows also the interesting tunnel stern construction with the continuous keel, absolutely protecting the propeller from grounding at any angle, besides considerably decreasing the draft. Note the hand hole above the wheel through which it may be inspected or adjusted.

Of course, in no service is the reliability and



The self-righting test conducted at the Lawley yard. The 16-18 h.p. Standard motor is installed under the housing amidships and the propeller is protected by the tunnel construction and continuous keel.

durability of the engine so important as in life-saving work, usually under the worst possible conditions, and the choice of the heavy duty, slow speed Standard is a signal victory for the manufacturers of this engine. The boat was constructed by Geo. Lawley & Son Corporation, and the test shown in the photographs was conducted in the presence of Mr. Chas. P. Curtis and Mr. Ellery Clark, of the Massachusetts Humane Society. In speaking of this test, Mr. Binney, her designer, says, "We put the launch with both tanks filled with gasoline, under the sheers or apparatus for hoisting her and then set the engine running and made everything fast. We opened the ventilators into the engine compartment and rolled the boat completely over. When the boat righted the cockpit of course was nearly full of water and it drained in 21 seconds. Although the ventilators into the engine pit were open, there was less than an inch of water in this compartment. The engine stopped when the boat was about half over, but upon righting, the engineer went aboard and started her immediately without priming or other adjustment."

When the Humane Society men went from Boston to Rockport, she made the run from Long Wharf to Gloucester in just 4 hours for the 28 nautical miles, and this was in a 22-mile breeze, which for most of the way was abeam.

The new boat is 30 feet over all with 8½ feet beam and draws 3 feet of water, and her 16-18 h.p., slow speed Standard was chosen with a view of being able to render towing assistance to sailing vessels, in addition to her regular duties.

A Runabout for Florida.

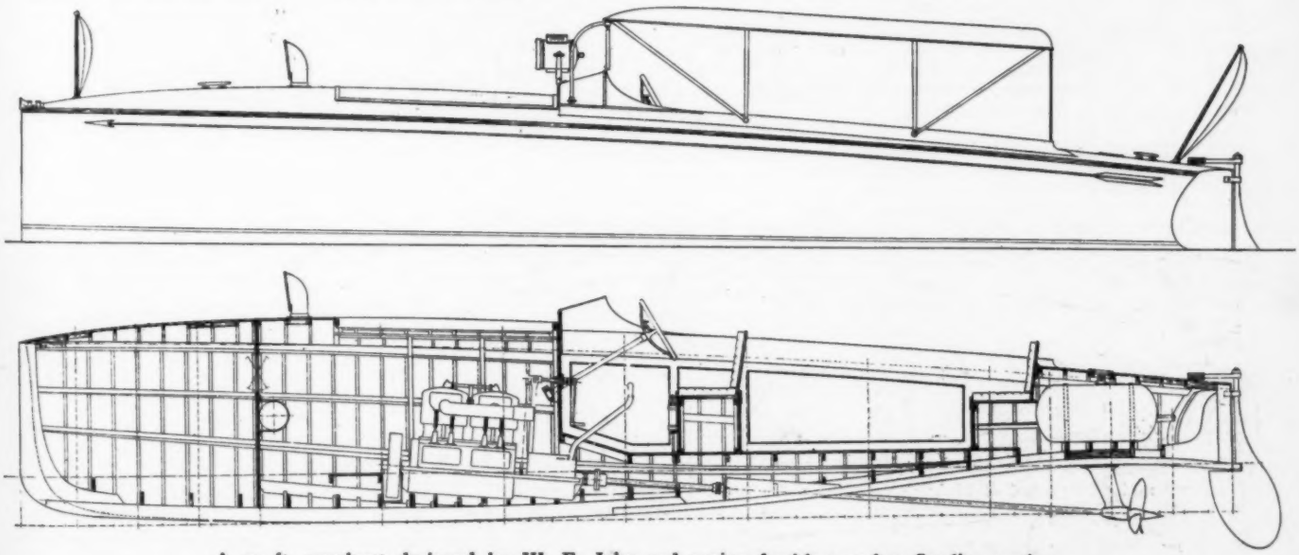
A Shallow Draft 25-Footer Equipped with a 25 H. P. Sterling Motor.

THE trim 25-footer shown below was designed by Wm. Edgar John, of Philadelphia, for use in Florida during the coming winter. The design shows a boat of moderately hogged sheer with considerable flare forward and well-crowned deck, under which is installed a four-cylinder, 25 h.p. Sterling motor. The motor is controlled and reversed from the helmsman's seat and is started from the same position by means of a rear starting device. The steering wheel is of the automobile type, and upon it are mounted the spark and throttle controls. There are two thwartship seats in the cockpit, the space beneath the forward one being used for the storage of tools, etc. The floor of the engine compartment and that just aft the bulkhead is covered with Pyramid aluminum with white rubber tiling in the after part of the cockpit.

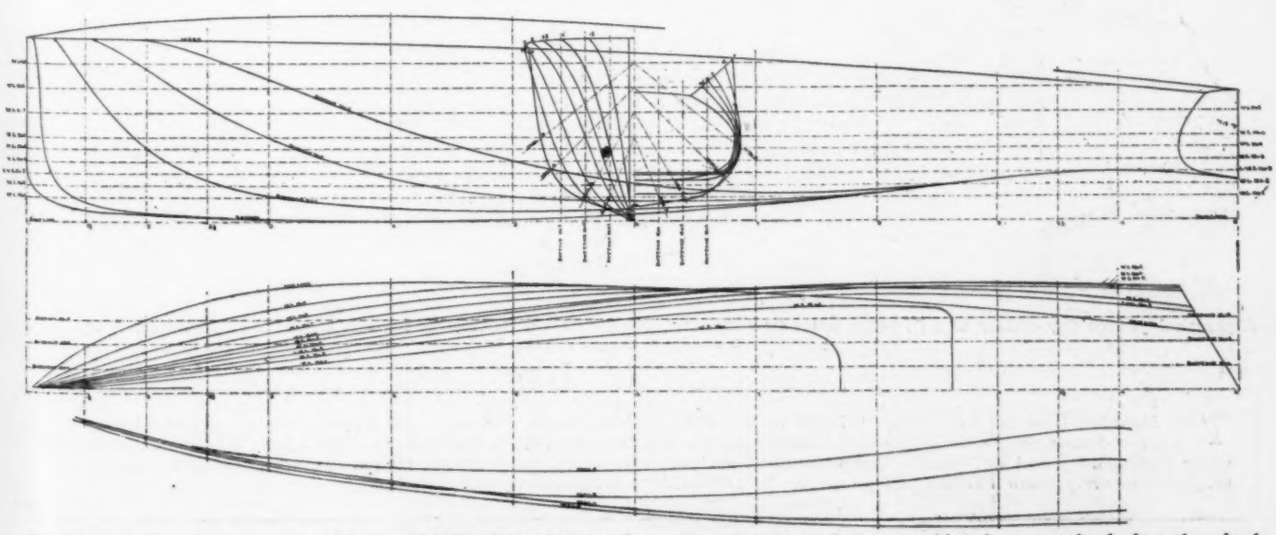
A 20-gallon seamless gasoline tank is installed under the after deck and a small air pump at the helmsman's seat is used to force the gasoline from the after tank to a small two-gallon tank hung on the forward bulkhead, from which it feeds by gravity to the carbureter.

The construction of the boat is of the finest, the keels and frames being of white oak with floors, deckbeams, and stringers of spruce. The planking is of mahogany below the waterline and white cedar above laid by the rib and carvel system. The decks are of mahogany in narrow strips with seams filled with yellow seam composition. The interior finish is in mahogany. All the deck fittings and the rudder are of a polished bronze and the upholstery is of green Spanish leather.

There is a glass spray shield swung from a pair of davits at the forward end of the cockpit and the auto top, a 7-inch electric light and electric running lights complete the equipment. The boat is 25 feet long by 4 feet 6 inches beam, and 1 foot 9 inches draft, and her estimated speed is 20 miles per hour without crowding the motor.



A 25 ft. runabout designed by W. E. John and equipped with a 25 h.p. Sterling engine.

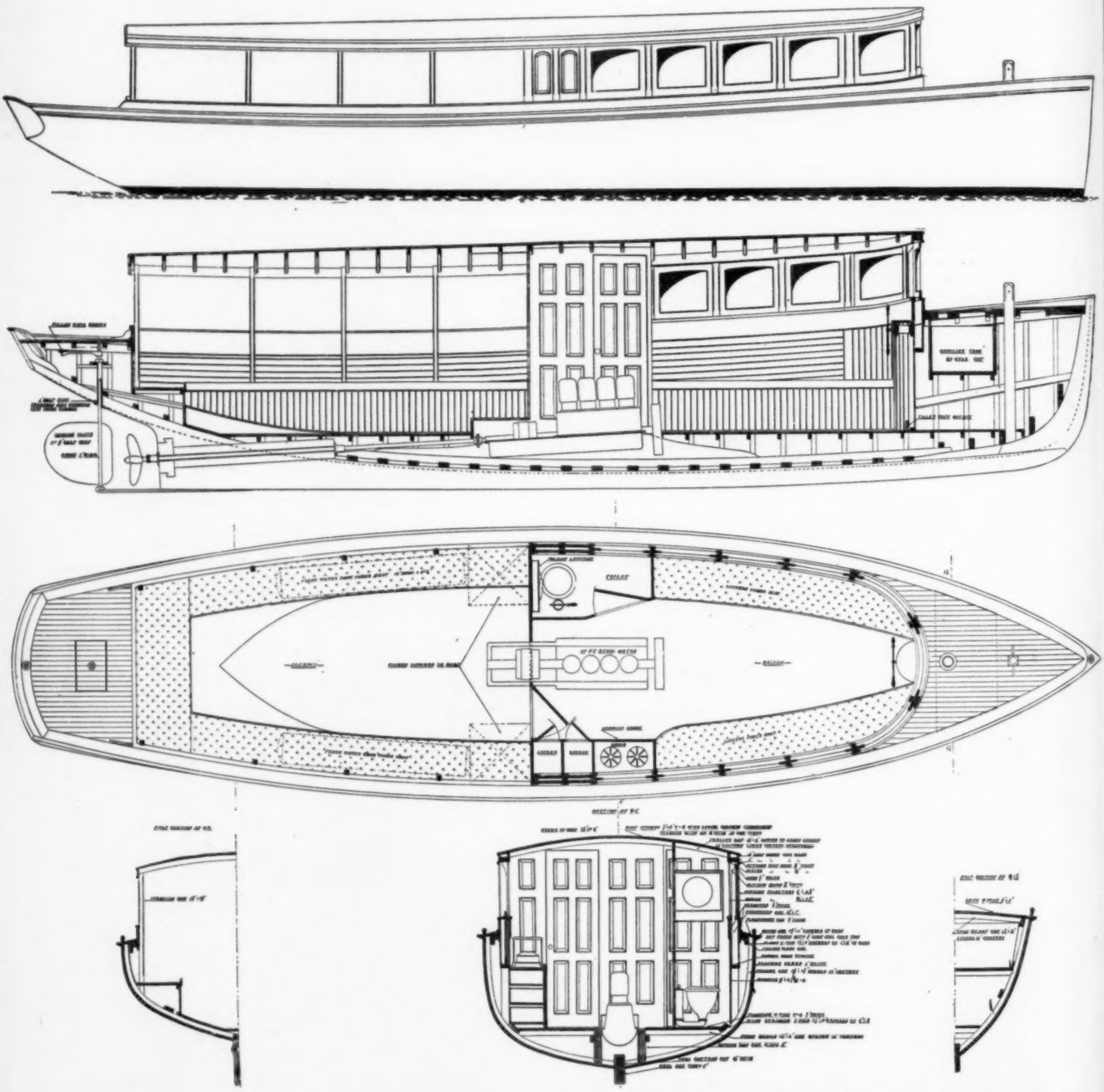


The lines show a fine entrance with considerable flare above and an unusual arching of the run which decreases the draft at the wheel.

A 36-Foot Day Cruiser.

THE design shown below is a recent one from the office of Mr. H. S. Thorpe for Clyde C. Knapp, Esq., and while it comes under the head of the day cruiser, it is thoroughly provided with accommodations for more extended runs.

She is 36 feet over all, by 31′ 3″ on the waterline, with 9′ beam and 2′ 4″ draft, and is of the standing cabin type, enclosed for about half the length. The boat is steered and controlled from the forward part of the house, which is provided with comfortable transoms on either side, the galley and enclosed toilet room. The motor, a 24 h.p. Regal, is installed amidships, just inside the cabin bulkhead, and the gasoline tanks are installed beneath the cockpit seats. The cockpit is large enough to accommodate a considerable party for day runs and the roof of the cabin is extended to form the cockpit awning. There is nothing radical about the design of the hull and it is of a thoroughly practical model for all round, everyday use. Her four-cylinder motor will give her a fairly good cruising speed.



A practical 36-foot day cruiser of 9 ft. beam and 2 ft. 4 in. draft, designed by H. S. Thorpe for Mr. Clyde C. Knapp. She is equipped with a 24 h.p. Regal engine.

THE December issue of MoToR BoatinG will be the Third Annual Buyers' Reference and Export Number. In addition to the regular departments of the magazine and several articles of general interest, the issue will be devoted principally to the American motor boat industry, and will contain descriptions of all the boats, motors, and accessories for the season of 1913. This great issue will be invaluable to every motor boatman and prospective boat owner, both in this country and abroad.

Gasoline, Kerosene and Crude Oil.

The Plentiful Supply of Kerosene and the Heavier Oils and the Possibilities They Offer as Substitutes for Gasoline for the Internal Combustion Motor.

By Edward B. Church

With gasoline above 20c a gallon in many localities, the question of possible substitutes is at present a vital one and this article is particularly timely. Gasoline will probably continue to be used for years to come as a fuel for the relatively smaller engines of most pleasure craft, but considering the plentiful supply of kerosene and its consequent cheapness, the coming year will probably see a much greater demand for it among commercial craft and cruisers just as the heavier oils are being utilized in the larger Diesel plants.—Editor.

THE development of the internal combustion engine during the past few years has made the fuel problem a serious one. The many advantages of this type of motor assure its complete supremacy for some time to come for small units, if a sufficient quantity of cheap and satisfactory fuel can be secured.

The possible supply may be drawn from three sources: coal products, alcohols and petroleum. Coal gas, as supplied through mains in our city streets, is only available for stationary plants, and producer gas, which is practically the same thing except that it is made for individual consumption, is open to the same objection; its weight, the attention required and the inconvenience of handling coal and ashes, overcoming the economy gained by its use except in the case of comparatively large sizes.

Alcohol has not been developed yet to any practical extent for fuel purposes, though there is no limit to the possible supply and ultimately it must be utilized. Some of its combustion products are more or less injurious to metals, the price has not yet reached the point of competition with other fuels, and it is not yet available in quantity in most localities. The products of petroleum seem to have the entire monopoly of the field at present, which position is threatened only by the question of adequate supply and price.

Before going into the subject of the relative value of petroleum distillates, it might be well to look at the subject of fuel and its combustion in a general way. The term fuel is applied to compounds of carbon, hydrogen and sometimes oxygen, which are capable of further combination with the oxygen of the air, the operation being started and accompanied by considerable heat. The value of the fuel depends upon the ease with which this process is connected and maintained, the amount of heat produced by it and the degree of neutrality of the products.

The carbon combines with oxygen and forms carbon dioxide, the hydrogen unites with oxygen and produces water. If the supply of oxygen is not sufficient the carbon combination will be carbon monoxide and much less heat will result, a considerable position will remain in the form of soot, and some of the hydrogen may pass off in the exhaust without being turned at all. If the oxygen supply is too great, the process of combination will be slow and feeble, and the gases will pass out of the motor before all the heat of combustion can be utilized. A liquid fuel must be transformed into the gaseous state before it can combine in this way with oxygen, and to secure complete and rapid combustion, must be thoroughly mixed with the air.

Petroleum is found to some extent in almost every country and is extracted from the earth through wells similar to those driven for water. In some cases it appears on the surface naturally, in others, pumping is required from considerable depths.

It varies somewhat in different localities but, roughly speaking, it is seven-eighths carbon and one-eighth hydrogen, with a small percentage of oxygen. It is a composite mixture of several different combinations of the above elements which vary in different samples. These proportions are difficult to determine by analysis and are not specially important for our purpose.

By the process of refining, which practically consists of boiling, condensing and separating the vapors, it may be divided into a number of liquids, varying considerably in physical characteristics. The crude oil is first subjected to a moderate temperature, the resulting vapors condensed and drawn off, the temperature is increased producing more vapors which are treated similarly, and so on.

By careful regulation of the temperatures and their duration, it is possible to produce an almost infinite variety of products, varying in volatility, specific gravity, fluidity and color.

The degree of volatility sets the standard for the products used as fuel, though some of them are gauged by an infernal system known as the Baume scale. Infernal because it is specific gravity upside down, the readings being converse, and serves no useful purpose unless one stands on his head mentally when testing by it.

To get back to petroleum, all its distillates produced at a temperature below, say 340° F. have a flash-point below ordinary atmospheric temperatures and are classed as gasoline, benzine, naphtha, etc. That is to say, at ordinary temperatures these liquids are so volatile that they give off gases which will ignite or flash if a flame is held over the liquid.

Before the advent of the internal combustion motor, these products being too inflammable to use in ordinary lamps and stoves, were hard to dispose of, and the quantity distilled was kept as small as possible. Laws were finally passed, specifying the flash-points of kerosene and burning oils, the numerous explosions of oil lamps and stoves showing that the refiners were leaving too much of the gasoline group of liquids for the next distillation.

A number of different grades were produced under this general head to meet the requirements of various trades as closely as possible and encourage the demand. To-day the enormous increase in the number of small motors using gasoline, for automobiles, marine and stationary purposes, has provided a market that has made what was almost a waste product that which is most eagerly sought.

To supply the demand, the oil refiners have been compelled to discontinue some of the more volatile grades, that the whole of the gasoline group may be volatile enough for satisfactory vaporization in these motors.

The writer recalls a product known as "Pratt's Deodorized 86° Naphtha," which once enjoyed popular favor for two-cycle motors in cold weather and almost all the veterans remember the "days of '76" (referring this time to gasoline). While both are still produced, it is doubtful that they can be readily secured in most localities, and the fact must be remembered that they are no longer necessary to satisfactory operation.

The improvement in devices for carburation has kept pace with the deterioration of the fuel, if it may be called that and will probably continue to do so. The change has been gradual so far, but we have almost reached the limit of the gasoline group of petroleum distillates, and a new proposition confronts us. Almost any motor of modern type and construction will use gasoline, benzine, different grades of naphtha, distillate, etc., because they are of the same general nature, and behave in a similar manner under motor conditions. In Pennsylvania petroleum the gasoline group comprises about 15 per cent. of the whole; the Texas and California products having somewhat less. About 60 to 65 per cent. of Pennsylvania oil is kerosene or burning oil under one name or another, which constitutes the next group of distillates. A temperature of from 350° F. upwards is required for production, and the flash-point varies from 100 to 250° F.

It may as well be said here that the temperatures of distillation and flash-points given here are only rough approximations to illustrate the subject. These vary with different crude oils, and in different refineries, and are the trade secrets of the oil refining business.

It can be seen, however, that there is such a marked difference between the temperatures at which the gasoline and kerosene group vaporize, that an entirely different treatment is necessary for each, to provide proper vaporization. In gasoline practice, no special provision is necessary. A stream of air at atmospheric temperature breaks up the liquid, the eddies of the air current through the pipes and valves break it up still more, and the heat of the motor and that derived from the compression of the charge cause the fuel to vaporize sufficiently for practical purposes.

If properly vaporized, one hydro-carbon compound is as good a fuel as another, generally speaking. There is not much chemical difference between gasoline and kerosene, and the proportions of carbon, hydrogen and oxygen are generally the same. The considerable difference in the volatility or vaporizing ability, however, has been the rock on which many an ambitious designer or constructor has "stubbed his toes."

Much more heat than that supplied by the atmosphere is necessary, and it must be furnished at the proper time. Kerosene has an unpleasant habit of disassociation when subjected to high temperatures. That is, its compounds break up into other compounds, leaving a residue of free carbon or soot. This is particularly true, when the heating takes place when the supply of oxygen is insufficient for combustion.

Many devices have been tried along the line of gasoline appliances, such as hot-air supply to the carbureter, heated retorts in which the fuel was vaporized before being mixed with the air, etc., and several successful ones are on the market. The principle of fuel injection direct to the combustion chamber has been tried with somewhat better success.

The original method was to maintain some portion of the combustion space at a very much higher temperature than the rest, usually by leaving it unjacketed. The fuel was supplied after the air was taken in, but before compression, and as there was often an insufficient supply of oxygen in contact with the fuel during vaporization, the fuel sometimes "broke up" leaving a serious carbon deposit. Again, as a vaporized fuel at a high temperature came in contact with the cooler air during compression, a further precipitation of carbon took place.

These effects may be illustrated very simply with the use of an ordinary kerosene lamp. By placing a card on the top of the chimney when the lamp is lighted, the result of vaporizing kerosene with an insufficient air supply is plainly shown. By holding any cold object in the flame the precipitation of carbon from cooling is illustrated.

In motors of the usual type, both for gasoline and kerosene, the compression is moderate, say sixty to seventy pounds, the ignition

(*Continued on page 48*)

THE PRIZE CONTEST IN QUESTIONS AND ANSWERS

NOW that hauling out time is at hand, one naturally considers how this should best be done. Among the several practical methods that present themselves of safely getting the craft out high and dry, none are better adapted to the average boat than a well designed and properly constructed marine railway. One of the most important and productive sources of revenue for the club treasury, is no doubt that which flows in as the proceeds for a reasonable hauling out charge made against the members who make use of the club's marine railway. In some instances this has been known to be even a larger amount than the regular dues themselves, and in fact large enough to pay for the entire cost of the ways, car and hauling out engine twice over in one year. The designs submitted this month are wonderfully well suited for the members themselves to get busy on and we are sure will make a paying proposition in a short time.

CLOSELY allied with a means for hauling the boat out for the winter is the question of a suitable covering to protect it from the wintry blast. This is a problem that none should overlook, no matter how small or apparently well protected the interior of the boat may appear. It is a long time before springtime comes again and a lot of damage can be done to an unprotected boat. On the other hand, a little foresight now as soon as the worst of the moisture gets dried out of the planking, will save hours of labor and many dollars of hard cash in the Spring.

THE QUESTIONS FOR THE JANUARY CONTEST ARE THESE:

Give instructions and drawings for the construction and use of a steam box for amateur boat builders.

Suggested by W. B. Moores, Newburgh, N. Y.

Describe with sketches satisfactory method of gearing motor to propeller shaft so as to increase revolutions of the wheel.

Suggested by G. S. H., Boston, Mass.

What is the best application or means of preserving the wood of new or old boats, referring specifically to the parts exposed to the bilge water?

Suggested by L. H. Prince, Philadelphia, Pa.

ANSWERS to these questions, addressed to the Editor of MoToR BoatinG, 381 Fourth Ave., New York, must be: (*a*) In our hands on or before November 25, (*b*) about 500 words long, (*c*) written on one side of the paper only, (*d*) accompanied by the senders' names and addresses. (The name will be withheld and initials or a pseudonym used if this is desired.) Questions for the next contest should reach us on or before the 25th of November.

THE PRIZES ARE:

For each of the best *answers* to the questions above, *any article* advertised in MoToR BoatinG, of which the advertised price does not exceed $25, or a credit of $25 on *any article* advertised in MoToR BoatinG, which sells for more than that amount.

(*There are three prizes, one for each question, and a contestant need send in an answer to but one, if he does not care to answer all.*)

For each of the *questions* selected for use in the next contest, *any article* advertised in MoToR BoatinG, of which the advertised price does not exceed $5, or a credit of $5 on *any article* advertised in MoToR BoatinG, which sells for more than that amount.

For non-prize-winning answers published we will pay space rates.

When you send in your answers, state what you will take if you win a prize.

Building The Marine Railway.

A Variety of Excellent Designs Suitable for Club Use and Simple Enough to be Made by the Members Themselves.

THE PRIZE CONTEST—Answers to the First Question in the September Issue.

THE accompanying sketch will make clear the construction of an easily and cheaply made boat haul out rig, that is comparatively light but with the necessary strength at the points where needed.

The skids are made as shown in Fig. 1 with 2x8 outer and 2x4 inner members faced with 6" 14-pound I-beam attached to wood members by ⅜ lag screws through lower flanges. The use of I-beam adds considerable strength, makes a convenient track for the car and gives necessary weight to sink the skids. The buoyancy of the skids can be further decreased, however, by using 1" black iron pipe for spacers, with ¾ iron rods through same with nuts on end for drawing up. The length will vary with different conditions of bank, bottom, etc., but the tread of same can be kept about 6 feet. Splices in the wood members of the skids must be well made, staggered and it is better to support the skids where joints are made in the I-beams. The car naturally has a tread to fit the track or skids and a wheel base of from 12 to 14 ft. for boats up to about 30 ft.

The wheels are made of 1" board, cut out

An I-Beam Track and Pipe Car.

(Prize Won—3A Eastman Kodak from Herbert & Huesgen Co.)

and built up with the grain arranged as shown. The boxes for same are made 2½" black iron pipe with a pipe flange (common) screwed on one end, while the flange at the other end is bored out to slip over the pipe when the flanges are screwed to the wood with large wood screws.

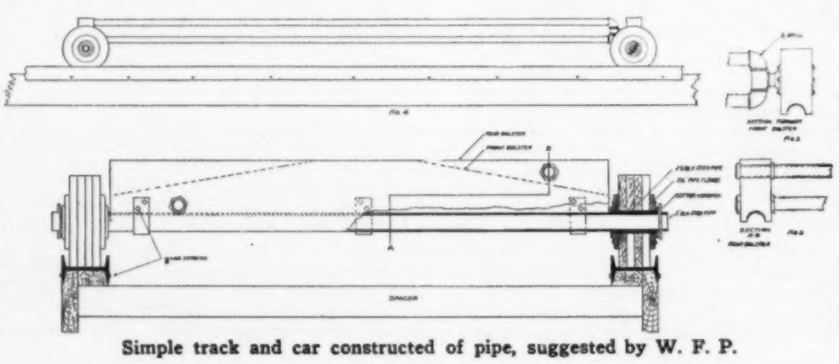
Axles are of 2" black iron pipe which will just nicely slip through the boxes. Wheels are secured to same by means of a cotter pin and washer on the outside. The bolsters are grooved on the bottom to receive the axle and should be grooved slightly deeper at center of the bolster as shown in Figs. 2 and 3 so that when attaching axle, same can be "sprung" when applying clips and will stay firmly in place.

Black iron pipe is used as reaches between front and rear bolsters. Fig. 2 shows how same is attached to rear bolster by means of pipe lock-nuts and Fig. 3 shows manner of making swivel at front bolster. The two ells are connected together, in assembling, by a short piece of pipe passing through a bored out tee attached to front bolster by a close nipple and floor flange through bolted to front bolster.

The ½" drilled hole shown is simply an air vent to allow air to escape when lowering car into water.

Have not shown cradle as this is best determined by prevailing types of boats to be handled, although the writer has used successfully, short lengths of rope attached to ends of bolsters, loose ends floated on water, which were used to lash boat to car when its weight was taken by car when coming out of water.

W. F. P., Flint, Mich.



Simple track and car constructed of pipe, suggested by W. F. P.

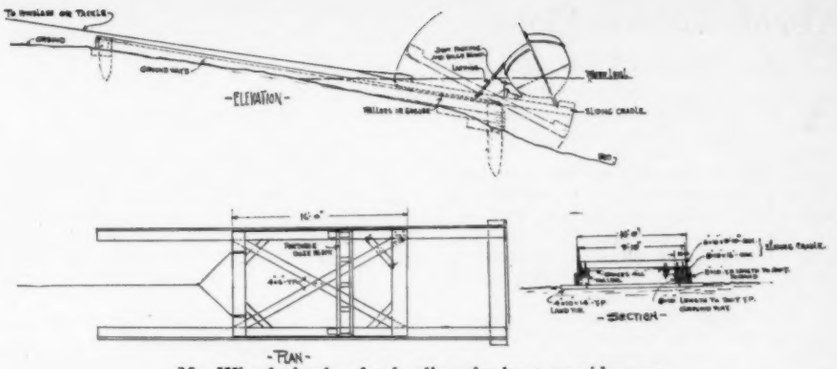
To Haul the Boat Out Sideways.

THE following description and accompanying sketches are intended to convey the idea of a small inexpensive and easily made marine way, suited to the private owner or club. This is not an untried device but a method of hauling out yachts that the writer used for several years with a great deal of satisfaction.

The choice of location is the first important step, the inclination of shore not being so important as the depth of waters a short distance off as this design of ways hauls the boat out sideways which allows greater scope of inclination and much shorter overall length than the marine way in common use which handles the boat lengthwise. A glance at the sketch which is drawn to take boats of about 30 feet and under will give the handy man information enough to start adjusting matters to suit conditions, such as material available, draft of boat or boats to be handled and the best location. The sizes indicated are approximate. The width of sliding cradle should be about one-third overall length of longest boat to be docked. Should a boat of more than ordinary draft wish to be hauled out, the cradle can be lifted as shown in elevation, this will accommodate varying drafts. The ground ways should be smooth on top sides so that grease or rollers could be used under sliding cradle and laid parallel, connected by land ties spaced six or eight feet. The ribands to be spiked on and to extend above ground ways a sufficient distance to accommodate rollers and form the cradle guide. A satisfactory ending of ways below water is important, where considerable tide occurs this will be comparatively easy, however, without the aid of low water this type of ways can be completed without the builder's head going below the water surface.

The sliding cradle is constructed similar to a stone boat, preferably of oak and weighted to overcome buoyancy. The portable bilge block may be solid timber or a box-like structure shaped somewhat to take boats bilge and padded. Block and tackle or windlass will be found suitable for operating, should the boat be a heavy one use a "luff" on tackle or a horse on windlass lever. Take a 30-footer, for example, about 7 feet beam and 2 feet 6-inch draft, adjust bilge block by placing about 3 feet from keel block, secure in position, push cradle overboard to desired position, the boats keel to be on shore side of cradle keel block. Haul in on tackle until cradle grips boat, now lash boat against bilge block and complete the hauling out.

E. B. WHEELER, Groton, Conn.



Mr. Wheeler's plan for hauling the boat up sideways.

Trails and a Steel Car.

THE accompanying drawings show all the general information and details necessary for the construction of a very efficient marine railway. They have been prepared to meet certain assumptions and must necessarily be modified to suit local conditions. The assumptions are, Railway on tidewater with 3′ 6″ rise of tide, car to have 3′ of water over it at low water and a bank on the edge of the river perhaps 6′ high, the railway to run to the level ground on top of the bank.

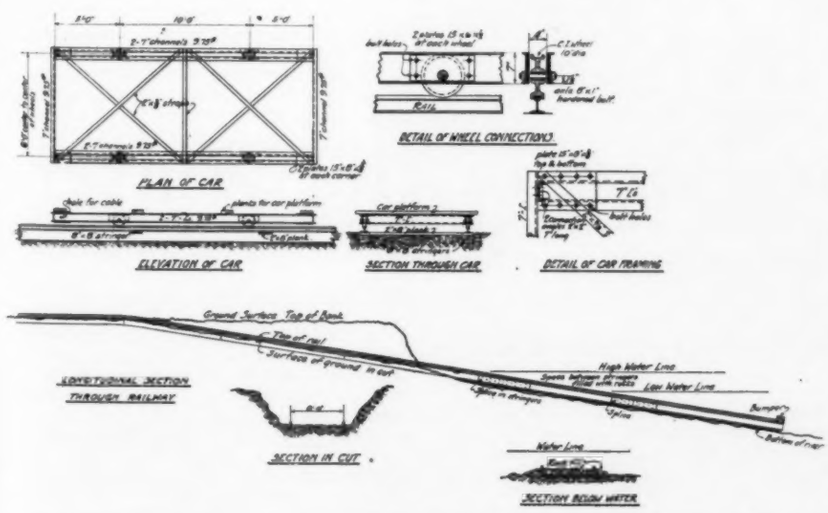
Select the site carefully to reduce the excavation to as small an amount as possible. Then dig through the bank for perhaps a 14 foot width so as to provide a continuous uniform slope from the shore to the top of the bank. Make the slope or grade as slight as is practicable. It is easier to move a boat and car up a slight grade than an excessively steep one. After the main excavating is finished a smaller trench is dug to receive the ties. These are 8″ x 8″ timbers laid continuously end for end under each rail and spaced 8′ center to center. Notches are cut at intervals so that a plank can be let in and spiked across between the timbers to keep them from spreading or hanging their position. This method can be followed to about the high water point. From here on the track structure must be completed in a different manner. To obtain 3′ of water over the car at low tide it will be necessary to carry the track to a point where there is a depth of at least 4′ 6″. From soundings we can determine how much track must be submerged. This length can now be constructed on the beach. If possible secure stringers long enough to reach from the end of the land construction to the end of the railroad under water. Should this length be too great, shorter stringers can be spliced together by nailing a plank on two sides, enough lengths being used to make up the requisite distance. These are laid parallel and 8′ apart similar to the others, but there is laid on these a solid floor of planks. This whole unit must then be turned over so that the plank floor is underneath. This can perhaps be most easily done if the whole mass is floating in the water. A heavy timber is then securely bolted to the end of the stringers to prevent the car from running off the end of the track. Rails can now be laid and spiked on the upper side of the stringers and the whole structure floated into its position. After being properly lined up the space between the stringers is filled with stoves and earth until it sinks; sufficient fill being used to insure its staying permanently in place. The laying of the rails can now be continued up the slope as far as desired. It is generally possible to purchase discarded rails from a street railway company which are still amply good for this service.

To construct the car for this railway, I have selected light structural steel shapes. While it is possible to use wood to build the car it will make it heavier and clumsier. This would have to be weighted in addition so that it would not float off the track and cause trouble. A steel car weighs less and does not require ballast, thus considerably reducing the dead weight to be moved up and down the grade. The standard structural shapes can be readily procured and are easily assembled without the aid of skilled mechanics. These shapes will be cut to dimension and punched in the shop where purchased without much additional cost. The side and end frames are made of 7-inch channel irons and the whole is tied together by 2″ x ⅜″ straps as shown. This with a few small plates and the bolts is all that is required. The wheels are of cast iron preferably with a bronze bushing and the axle can be a hardened bolt passing through the channel frame and re-enforcing plates with the wheel between the channels. The car should be painted several coats of paint to prevent rusting. This car with wheels and fittings will weigh only about 1200 lbs. while a wooden car of about equal size and strength will weigh from 400 to 500 lbs. more.

The approximate cost of an outfit such as described will be perhaps $200. This will be divided up in cost of track and track timbers of about 75 cents per lineal foot, and the car whether built of steel or wood will cost about 70 to 80 dollars. This depends on how advantageously the material and fittings can be secured. If the work is done by hired labor it will necessarily increase the cost. Three men for two weeks will probably bring the total $100 higher.

I have purposely omitted mention of the winch or hauling device as this depends entirely on financial circumstances. One can get a satisfactory winch very reasonably or a beautiful electric or gas engine hoisting machine for considerably more. It should be placed at the extreme end of the railway and be attached to the car by a steel cable which winds up on the drum of winch or hoist.

F. W. HORENBURGER, New York City.



A car and railway constructed entirely of standard structural steel shapes, designed by Mr. Horenburger.

A Practical Car and Scheme for Storing Boats.

A SIMPLY constructed but very convenient marine railway in operation in tide water is here illustrated and described.

The rails and cross ties and the cross rails and blocks are all 4" x 6". The rails are 4 ft. gauge and are covered on top with 4" x ¼" steel strips for easy running, which are screwed on. Heavy square spikes are used to hold the rails to the cross ties. A trench is dug to accommodate this railway to the proper height in relation to the cross rails. The ties are imbedded in the ground.

Piles with cross ties are at the outer end and a walk is provided. A bumper at the end of the rails is also provided. The winch used was secured second hand from an old dray—the kind they carry and hoist safes with. The drum shaft is placed just on top of the rails and is connected to the handle shaft above with a set of gears.

⅝" Flexible galvanized wire rope is used. The car is principally made from 4" x 6" and 6" x 10" securely bolted and braced. The wheel shafts are bolted under these 6" x 10" and the wheels revolve on them—the shaft does not move. Eye-bolts to hold a chain bridle are fastened to the end of the 6 x 10's and eye bolts are provided at the ends of the 4 x 6's. Some old cotton fire hose is nailed to the upper inner edges of the 6 x 10's to prevent damage to a hull. The car is 12 ft. long.

Two roller trucks as illustrated are required and two screw jacks. This railway though used in tide water, could be installed anywhere.

Ropes are fastened to each eye in the 4 x 6's of the car and a man on each side goes out onto the walk, pulling the car down to the end by means of these ropes.

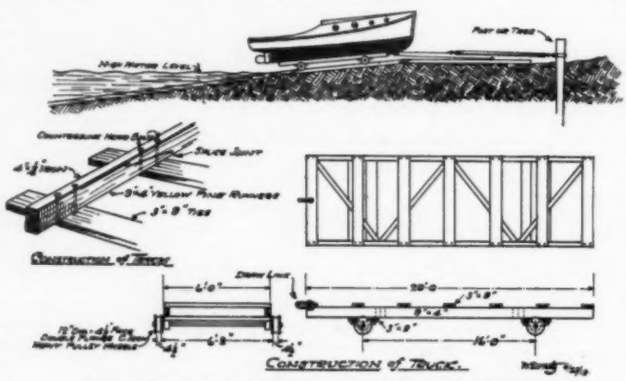
The boat is warped in between the piles—the piles and walk greatly facilitating this end of the work—until the bow rests on the car, between the 6 x 10's. The front ropes are then fastened to the boat. The winch is now operated until the boat rests entirely on the car, and after the back ropes are secured to the boat to keep it from upsetting, the car is hauled out, until it is opposite a pair of cross rails, when the wheels are blocked.

Now a couple of screw jacks are operated under the boat until it is raised sufficiently to add the loose 4" x 6" rails which span the trench and a truck on top of this. The boat is let down on the trucks and with the aid of some muscle, the boat is rolled along these cross rails to its final destination.

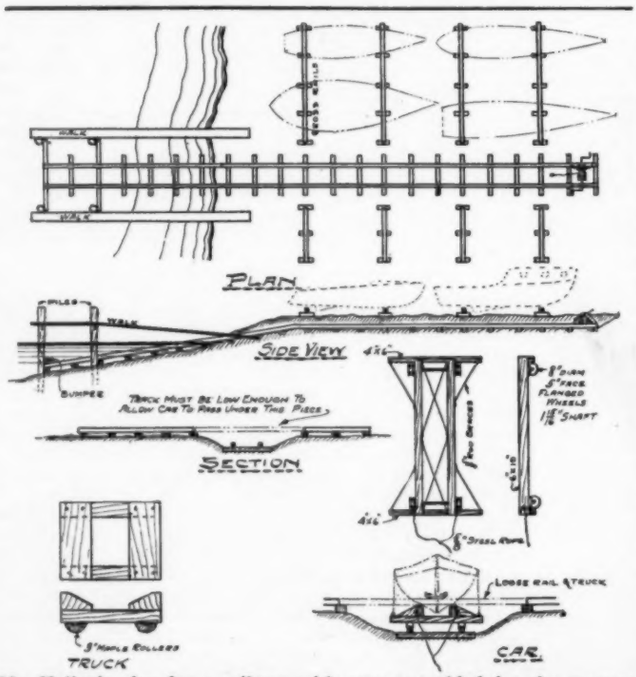
A discussion usually arises over the cost of a marine railway among small clubs. Some justly claiming that they should not share the expense since they will never use it.

To get around this a charge can be made for its use. The money thus collected will pay for the outfit and also go for necessary repairs.

L. R. Kelley, Philadelphia, Pa.



A wooden track and car designed by Mr. Motz.



Mr. Kelley's plan for a railway with space provided for the storage of boats.

Easy to Build, and Efficient.

THE railway illustrated below is the simplest possible arrangement for hauling out boats up to thirty-five feet in length, and can readily be constructed by club members. Referring to the drawing, the track is shown of 4" x 9" yellow pine faced off with 4" x ¼" iron for easy running, and to protect the track from the travel of the wheels. The track is supported upon wooden ties, 3" x 9" which may also be of yellow pine, although any water resisting fairly tough wood will do. The ties are spaced every three feet and are fastened to each track with two ½" countersunk head bolts which also fasten the facing iron in place as shown in the enlarged detail.

The track suitable for the truck as shown in drawing (6 feet wide) would have to be 6 feet 2½ inches gauge, and the length depends, of course, upon the depth of water desired at the foot of the railway, and the distance out of the water that it is desired to haul the boats. Joints in the track should be made as shown in the detail.

For the truck, two 4" x 9" timbers of yellow pine 20 feet long are the main pieces, braced diagonally with timbers of the same size and cross-tied with 3" x 9's on the top and bottom as in sketch. The four bottom cross ties carry the boxes for the axles, which should be plain cast iron split bearings, readily procurable in any supply house dealing in shafting, bearings, etc. For the wheels, get extra heavy cast iron pulley's of the double flange type, bored for 1-15/16" diameter, cold rolled steel shaft. These wheels will bear against the wood on the back and a washer and split pin should be put on the end of shaft to keep them in place. A draw link is securely fastened to the front end of the truck as per drawing, and with all members fastened together with bolts the truck should be very sturdy.

Now for the method of using the truck. As seen in drawing a block and tackle arrangement is hitched between the truck and a tree or if none is available, a post will have to be deeply sunken on which to tie one end of the tackle. By shifting the fixed end of the second rope (which is shown passing through a shieve on the truck) a comparatively short rope in the blocks is all that's necessary.

W. Elmer Motz Philadelphia, Pa.

Covering the Boat for the Winter.

Several Schemes for Protecting the Boat from the Weather and a Discussion of the Good and Bad Points of Each.

THE PRIZE CONTEST—Answers to the Second Question in the September Issue.

UNDOUBTEDLY the best material to use for the covering and protection of a boat in winter is canvas of not less than 8 ounces and it should be made to fit; indeed, unless a cover is made to fit the frames it is almost as bad as not having any. The frame is easily constructed, being nothing but a backbone, of 2" by 4", and with ribs 1" by 3" as shown in the photograph. These frames can be made so as to conform with the shape of any boat and the photograph shows the frame in position on a high-cabined 45-footer, the advantage for this being that during the winter there is full headroom on deck should the owner wish to go on board and inspect his boat. Another photograph shows how it is possible to build a frame for a 70-footer and how, on sunny days the canvas may be rolled back to give the boat a thorough ventilation.

Now comes the making of the canvas cover.

Neat and Substantial.

(Prize Won—Hunter Baltimore Rye.)

In the first place this is no job for the amateur unless he be painstaking and not unskilful, and it is best to let a sailmaker have it. If, however, you are determined to try buy your canvas in the widest possible widths and save some seam sewing. All seams should be across and not lengthwise. Make your measurements from rail to rail, over the ridgepole, or backbone, and allow not less than 12 inches, 6 inches on each side for turning in to make the hem. The most difficult measuring will be at the bow but after that it will

be comparatively easy. When the several widths have been sewed try on the cover and mark for the hem, doubling in the canvas to four thicknesses which will make a better and stiffer job giving the maximum of strength where it is most needed. When the hem is completed then put your grommets, one every few feet, so that, with a light line you can lace the cover under the hull from hem to hem. The after end of the cover may be left open or closed, in which case you may also construct a "door" in the canvas.

Now, if you want to have the best kind of a cover, put on an apron to protect the sides. The upper photograph at the bottom of this page shows how the apron is made fast at the bow and under the hull. This is the ideal type of canvas cover.

Should, however, you want something more substantial than canvas the combined use of canvas, wood and tar paper is excellent. Each section is marked and can be put on in a little while. The objection to a cover of this type is that it requires much space to store away whereas the canvas cover can be rolled into a compact mass and be stowed in a locker and only needs to be kept dry.

This canvas is not generally waterproofed although waterproofing will not hurt it. For this I would recommend the British Navy recipe: Dissolve a quantity of soft soap in hot water and add to it enough of a solution of iron sulphate to precipitate. Dry the precipitate and then mix it with pure linseed oil. This will not only make the canvas impervious to rain but it will be flexible and not likely to crack.

STUART STEVENS SCOTT, Baltimore, Md.

Note.—See also photographs with article on "Hauling out for the Winter" in this issue.

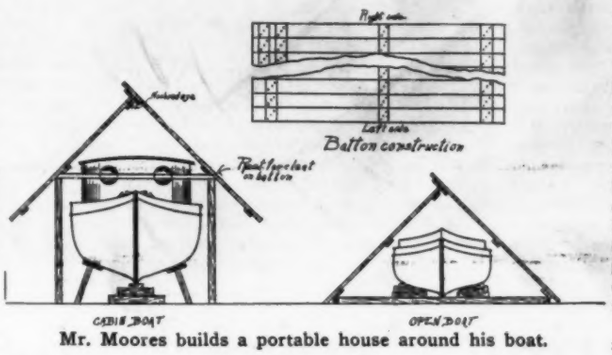
A Winter Covering of Canvas.

THE average boatman covers his boat for the winter with a piece of canvas securely fastened around the hull. This method keeps off the rain and snow to a certain extent, but the canvas is so close to the hull that the dampness comes through and the sides and decks are continually wet to the detriment of the paint and varnish. Another disadvantage of this method is that the hull does not get a chance to be properly aired and ventilated. The proof of this is that the majority of boats are musty and mighty disagreeable below decks when fitting out time comes. Still another disadvantage is that in case you wish to get into the boat at any time during the winter, you have to take all the canvas off and then cover the boat up again. All this takes time and usually results in the canvas being torn.

The method I am about to explain overcomes all the difficulties mentioned above. The initial cost of this cover will be more than that of the canvas alone, but it will last for years, if stowed away during the summer. It really will shed snow and rain without sweating the boat, and at the same time it will give the hull a chance to get properly aired.

If at any time you wish to work on the boat you can do so without removing any part of the cover.

The first requisite is five or six 2 x 4 inch spruce joists. Fasten these up in the form of a tent as shown in the drawings, being careful to fasten them securely at the tops and stake them well into the ground. The frame



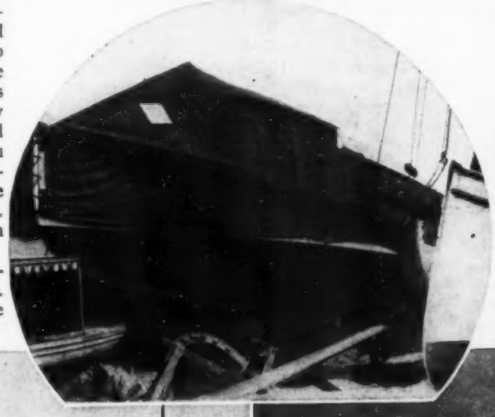
Mr. Moores builds a portable house around his boat.

work wants to be at least 15 feet longer then the boat, and so located that the tent will project 7 or 8 feet beyond each end of the hull. Now throw a large piece of canvas over the frame, fastening it at the ends and center to the joists with nails driven through a batten, and then stake the edges down very securely in the ground. Be sure to get the peak of the frame up high enough so that the angle will be enough to shed easily. Leave the ends open. What little rain or snow that beats in the 7 or 8 feet that projects will not hurt the boat, and the advantage of having a current of air rushing through the tent from end to end more than makes up for what does come in.

There will be plenty of room both under and over the hull for you to do any work that may be necessary.

GERALD T. WHITE, New York City.

A neat canvas covering made fast with lashings and battens.



In a Portable House.

WINTER weather shows its effects on most boats more than the whole season's running. A boat left at the mercy of the elements all Winter with nothing more than a canvas cover which has torn and partly blown off, will be damaged considerably, to say nothing of the extra work and expense at fitting out time. If you will house your boat as follows, no weather can harm it.

Securely block up the keel fore and aft, and under the engine. Brace up fore and aft in a manner that will allow their moving for painting. A roof of 1" x 8" ship lapped North Carolina pine roofing, made into battens 10 ft. long, as shown in the drawing, will be easy to handle and store in summer. Ten foot lengths for larger boats and eight foot lengths for smaller ones will be found plenty long enough and cheaper. These battens can be hooked together with hooks and eyes or they may be screwed together. A hatch can be put in over the after deck and sash over the skylight to light the interior.

For a cabin boat set posts at the corners and one or two intermediate posts as the length may require. The height can be easily determined by setting up two 10-foot battens. Around the top put a frame of 3" x 4" spruce. Brace between posts and plate to hold rigid. Set up two opposite battens at a time, letting the lower cleats rest against a strip nailed to the plate and to the top end of one fit below the two battens. Put two hooks across the top and at the joints of the next battens and two screws through the lower ends. When all the battens are up make another batten for the gables or nail bands across. Canvas or old sails nailed at the eaves on the inside and drawn around the boat will help protect it, but are not necessary if the keel is blocked up a couple of feet from the ground or more projection is allowed.

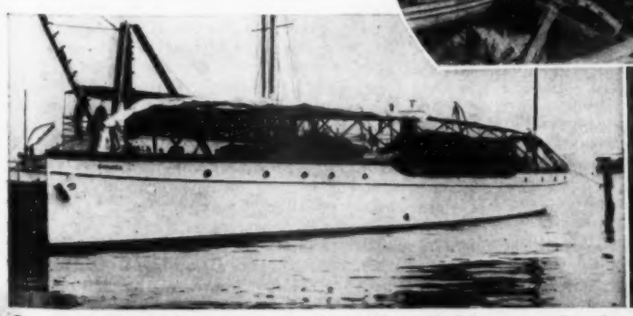
The same style cover may be used for a small open boat. Instead of setting posts place the frame on the ground. Sides and ends could be made in the same way and hooked fast. If given two coats of paint this cover will last as long as the boat. A composition paper roof could be added but the steep pitch will run off all water and snow.

W. B. MOORES, Newburgh, N. Y.

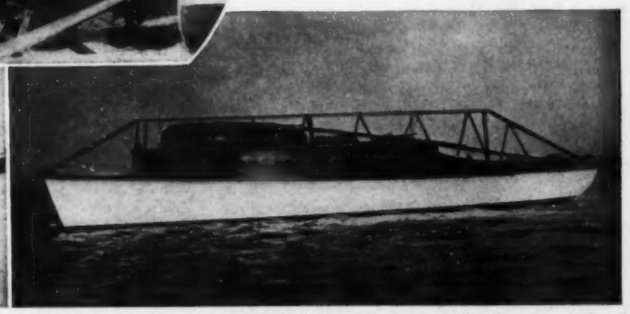
Provides Plenty of Ventilation.

IT is assumed the boat has been properly hauled out, well blocked up and securely shored. That the outside has been cleaned and given one coat of paint; also the inside has been well scrubbed and drained, the motor cared for and all duffle removed.

It is our purpose to adopt the canvas housing with the following modification, and suggest the upper edge of the ridge pole of 1" x



On sunny spring days the cover should be rolled back to give the deck and fittings a chance to dry out. The picture shows Mr. Scott's idea of how this should be done.



A boat moored in a protected place winters as well afloat as on land. Mr. Scott built a substantial frame work before putting the canvas on the boat.

4" stuff be rounded and supported by braces made so as to fold (a bolt acting as a hinge, and when opened to position, a notch is cut to receive the ridge pole). Have no points or square edges to chafe the canvas. Attention is directed to the following as it is believed it will remove one of the most objectionable features of the canvas cover.

We are well aware of the sweating that occurs in the interior of a boat when the sun beats on this type of cover. To eliminate this it is our plan to tack strips of 1½" half round stuff from deck moulding to below the canvas margin. A number of these strips will be placed on each side inclined at an angle of say 45°, from above downward and forward at the bow and in the opposite direction toward the stern. A piece of half round will be fastened outside these strips above and below to prevent chafing the canvas on the strip ends.

The canvas, properly grommeted, is now brought down from the ridge pole and lashed to the opposite side under the keel. It will be seen now that no part of the canvas rests on the boat's sides, and that free ventilation is provided, as a positive exit is provided for the expanding air. The boat will therefore be dry and the minimum of dust present. All drip from rain and melted snow will be carried to the lower edge of the canvas and along the lashings. The incline of the strips will favor drainage and prevent collections of water along the mouldings and decks. The purpose of the half round is to favor collection of water between half round strip and the canvas rather than between strip and sides. Provide for good pitch to the roof.

The ports, companionway and windows to be partially opened. It is hoped the accompanying sketch will make the idea clear.

L. H. Prince, M. D., Philadelphia, Pa.

Tar Paper on Frame Work.

THERE are many excellent ways of covering or housing a boat for the winter season. The money and time one wishes to lay out on his boat is, perhaps, the best criterion of the most suitable method.

The ideal way is to haul out the boat and store her in a dry shed. Next to this, a wooden covering, a veritable shed in itself, is, no doubt, the best solution of the problem. However, a well-built frame over which is stretched canvas or fairly heavy tar paper will be found to be quite cheap as well as very efficient. If the frame is carefully numbered, tied up and stowed away each spring, it can be erected in the fall with very little difficulty. With a little care such a covering will last for years, and will be water-tight.

The sketches will give some idea regarding the scantlings and method of erecting a frame for a 40-foot launch. Of course, these scantlings may be modified to suit a smaller boat.

The frames may be built of spruce, pine, or even hemlock, and would be more easily dismantled if put together with screws. There should be at least three or four studs to support the ridgepole, while the carlins should be no farther apart than three or four feet on account of the heavy snow collecting on the covering.

In some localities one may even go into the woods, pick out a suitable spruce or pine sapling, strip the bark from it and use it as a ridgepole, lashing each end securely, and putting three or four supports under it. By stretching canvas over it one can get a very satisfactory cover at small cost.

C. D. Davis, Sparrow's Point, Maryland.

Interesting Cruise Experiences.

Valuable Data and Information About Several of the Most Popular Cruising Grounds in the East from Actual Experience.

THE PRIZE CONTEST—Answers to the Third Question in the September Issue.

The Champlain Cruise.

(Prize Won—Compass and binnacle.)

CRUISERS may conveniently be divided into three classes: those who luxuriate afloat on large sea-going yachts, those whose pride rests in the popular "one-man" cabin boat which has facilities for sleeping and cooking, and those who cruise in open boats and must depend on terra firma for meals and beds. We were a sort of combination of classes two and three, for we had an open boat but we carried a tent and cooked over a campfire. It would be hard to conceive of a route more adaptable to the needs of anyone cruising as we did, or for that matter, to members of classes two and three in general, than that covered in what is popularly known as "The Champlain Cruise."

Three of the cardinal points of the compass are open to the cruiser who starts from New York City. He may proceed southward by the famous "inside route;" he may turn toward the rising sun and visit some of the beauty ports of Long Island Sound, and farther eastward, feel beneath his keel the leaping pulse of the ocean itself; or, he may use the Hudson River as a majestic gateway to the cruising waters of the north—Lake Champlain, the Great Lakes and the St. Lawrence River. But the southern trip is unsatisfactory without more time than the average vacationist has at his disposal and furthermore it is apt to be enormously hot in summer. To the experienced owner of a staunch, seaworthy craft, one who rejoices in the spume-tipped crest above him and feels no fear, the coast to the eastward will bring more jest and spice than the "raging Erie" or the tranquil reaches of Southern Champlain. But to those about to make their first extensive pilgrimage by motor boat; to those with an appreciation of the truly beautiful and a desire for variety for water and an ever-shifting scene; and to those whose time is limited, the Champlain cruise undoubtedly presents the greatest advantages and attractions.

The trip can be made in two weeks—three is better. We were gone a month, but we sailed from the eastern end of the Sound and we devoted a whole week to a camp near Burlington. The greater independence of those who cook and sleep on board will enable them to make the trip in slightly less time than those who must visit hotels and restaurants, but to one and all, experience sounds this warning, "Don't try to go too far in a given time." An owner of the ordinary boat of 7 to 8 miles per hour speed will find an average daily mileage of fifty or sixty miles with time out on Sunday sufficient to keep him busy.

One word on equipment. This is not an "outside" cruise and you may dispense with sea-anchors and oil bags. Furthermore, since food and water may be had frequently and conveniently, your stock of supplies may be kept reasonably small. But gasoline is not always so accessible—strange as it may seem. The most convenient places for replenishing tanks are located at Weehawken, Peekskill, Poughkeepsie, Hudson, Albany, Whitehall, Burlington and Plattsburgh, and you will find it inconvenient if you allow your supply to run out between these ports. Do not neglect to comply with government regulations as to lights, whistle and fire extinguisher even if bound inland. The charts you will require are No. 281, 282, 283, 284, 554, 555, 556, and if going north of Plattsburgh, 553. Coast Pilot Volume V and the government tide tables will be found valuable.

The following disconnected pointers suggested by our log may be found valuable to those taking the cruise:

On the Hudson try and lie over night in places protected from the swell of the numerous night boats. At Popola Cove (short five miles below West Point) the entrance to Saugerties and Athens (opposite Hudson) peace and comfort may be obtained. The first named is a delightful spot of great beauty in the midst of the Highlands.

At Albany get permit for use of the canal at the office of the Superintendent of Public Works, in the Capitol. N. B.—Get a box of cheap cigars for lubricating the canal gate keepers. Quantity counts here.

The Champlain Canal is owned by the state and is free. Consequently, it is fair to observe speed law of four miles per; it is also safer. It is better to deal with delays at the locks with jollying than fulminations.

A night on the canal, lying to in one of the many little lights, on the side opposite the tow path, of course, will be found far quieter and pleasanter, than if spent at Albany or Troy.

Don't pass the southern end of the Lake in a hurry. Two interesting days may be spent between Whitehall and Crown Point.

Visit Lake George from Ticonderoga by rail and steamer rather than twice hauling boat over the "carry."

At Burlington a good place to lie is at Queen City Park around Shelbourne Point. From the Vermont metropolis you may make very enjoyable day excursions in your boat to Port Kent (Ausable Chasm), Plattsburgh, and Mallet's Bay.

Bradford Burnham, New York City.

Massachusettes and Maine Coasts.

A CRUISE that appeals to yachtsmen, particularly those hailing from Massachusetts bay ports, is to Casco Bay, up the Kennebec to Bath, thence among the islands to Boothbay Harbor, Me. This jaunt I have taken in sail and power craft and it never palls. Harbors are at hand every few miles and no matter how small a boat may undertake the cruise there is small probability of getting caught in uncomfortable weather. Distances for day's run may be small so as to spend a week in traversing about 150 miles on the outward passage, or a boat may be put right through to the end of the route.

Most everybody has knowledge of the beauties of the coast of Maine, its clear waters, its granite shores and evergreens, and the countless islands. Many have tasted the delights of a sojourn there; others, less fortunate, hope the time may arrive that will find them bound thither in a right little, tight little, cruiser. Size counts for naught as regards the boat so long as the cabin affords sufficient accommodation for those aboard. One might navigate those waters on a raft in the summer season without encountering a breeze or sea that could be classed dangerous. But, it must be borne in mind, gales and "he" fellows romp across the gulf of Maine at intervals and should be watched out for before quitting harbor.

Gloucester or Annisquam, Mass., usually is the port from which departure is made for Maine. The run across Ipswich bay from either place is comparatively short and skippers generally strike out when indications point to moderate breezes. The Boston yacht club has held several annual cruises to Boothbay Harbor, and beyond Bar Harbor to Winter Harbor, Me. The regatta committee of the club has arranged sailing courses for each day's cruising run and these courses constitute a helpful guide for the amateur and a reference or memory-jogger for the professional who would go the same way.

I submit, herewith, courses above referred to, from Gloucester, Mass., to Boothbay Harbor, Me., with calls at some of the most picturesque spots. In connection with the sailing directions, the regatta committee, to be on the safe side, cautions captains that the courses are given primarily to identify marks. The courses follow:

Gloucester—From red spar No. 4 off end of Breakwater 7/8 miles to whistling buoy, leaving it to port, 5 7/8 miles to Londoner, leaving it to port, 2¼ miles to Salvages, leaving it to port, then steer about N. ¼ W. 23¼ miles to bell buoy off Kitt's Rocks. This brings one to the entrance to Little Harbor, N. H. Total distance about 32¼ miles.

Little Harbor—From bell buoy of Kitt's Rocks steer about NE. 36 miles to Old Anthony whistle, leaving it to starboard. Then steer about N. by E. ¾ E., 3¾ miles to black can "T R" off Trundy's Reef. Total distance about 40 miles. This brings one up to the entrance to Portland Harbor and the way in is splendidly buoyed. Many yachtsmen prefer to anchor at Peake's Island, across from Cape Elizabeth, but the Portland yacht club anchorage is secure and visitors may feel assured of a warm and hospitable welcome.

Portland Harbor—From black spar buoy No. 5, off end of breakwater steer about NE. ¼ E., 1⅝ miles to red buoy No. 2 off Diamond Island, leaving it to starboard. Then steer about NE. ¾ E. to red buoy No. 4 off northern end of Chebeague Bar (passing Cow Island ledge spindle to port and Brimstone Ledge red buoy to starboard). Leave Chebeague Bar Buoy to starboard and steer E. NE. ½ N., 5½ miles (leaving French Island and Bibber's Rocks to starboard) to red spar buoy No. 6 off Mere Point. Distance about 13 miles. This course opens some of the most inviting scenery to be found along the entire coast and Mere Point is the summer home of an exclusive summer colony of West Brunswick.

Mere Point—From spar buoy No. 6 steer about S. ¼ W. to black spar No. 7. Then steer SW. by S., 4 miles (leaving Whaleboat Island to starboard) to red buoy No. 8 west of Birch Island ledge, leaving it to port. Then steer S. SW. 2 miles (leaving Eagle Island about ¼ mile on port hand) until Mark Island ledge buoy bears E. SE., when steer SE. by E., 1¾ miles, leaving Mark Island ledge buoy ¼ mile to port and when abreast this buoy steer E. ¾ S. about 6 miles to East Brown Cow, leaving it to port, until Wyman's Ledge bears N. NE., when steer on this course about 2¾ miles (leaving Wyman's Ledge and Jamison's ledge to port). When past Jamison's ledge steer N. ½ E. about 1¾ miles about half-way between Bear Island and Fort Point until Sheep Island ledge buoy No. 1 bears NE. by N., when run for it 1⅛ miles on that course, leaving it to port and steering N. NE. 1½ miles to Birch Point. This brings one to Winnegance Bay and New Meadows River, each delightful and widely favored among yachtsmen who know.

Winnegance Bay—From Birch Point steer about S. SW. 1½ miles to Sheep Island Ledge buoy, leaving it to starboard, then steer about SW. by S., 1⅛ miles until Jamison's Ledge bears S. ½ W. when steer about S. 5¾ miles (leaving Jamison's Ledge and Wyman's ledge to starboard and Wood Island and Gooseberry Ledge spindle and Bald Head spindle to port) until Glover's Rock bears about E. ¼ N., when steer for it 1⅛ miles, leaving it to port. From Glover's Rock steer E. by N. ½ N., 9¼ miles to Cuckholds (leaving Jacknife Ledge and Pond Island Bar to port and White Ledge buoy No. 1 and Sisters to starboard. Leave Cuckholds bell buoy to port and steer about N. NE., 3 miles, leaving red buoy off Squirrel Island to starboard, thence to an anchorage in Boothbay Harbor. Total distance about 21¾ miles.

Boothbay Harbor—From spar buoy No. 1 off Burnt Island steer S. SW. about 3 miles to bell buoy off Cuckholds leaving it to starboard. Then steer SW. by W., 8½ miles, to whistler off Seguin, then steer W. ½ N., 11¼ miles, to whistling buoy off Half Way Rock and continue W. ½ N., 6¼ miles, to Witch Rock gas buoy. Leave Witch Rock to starboard and steer NW. ¾ W., 1½ miles to bell off Cushing's Island; anchor off Peake's Island. Total distance about 30½ miles.

The above general directions, supplemented by study of charts covering the localties mentioned, should enable the prospective cruiser to arrange side trips into most, if not all, the interesting nooks in that section of the Pine Tree state's coastline.

G. S. H., Boston, Mass.

Delaware River and Chesapeake Bay.

THE cruise herein described was taken in August, 1911, and as it is thoroughly practicable for a small boat, and can be made at a cost of about one dollar a day, may probably be of interest to such of your readers as, like myself, are the owners of small boats.

The boat is a fantail of conventional type, 23' 6" overall, and 6' beam. She is powered with a five-horse Lozier engine of make-and-break type.

The cruise was made from our home port, Bristol, Pennsylvania (23 miles above Philadelphia), on the Delaware River, to Rock Hall, Maryland, via Delaware and Chesapeake Canal, and the crew was composed of Dr. C. S. Abbott and the writer.

We carried only the usual stores of bacon, potatoes and coffee, canned beans and soup, and protected the boat only by the addition of a belt of canvas 16" wide and 12' long, drawn around her stanchions and made fast to them, and carried a canoe on the roof.

Our sleeping arrangement consisted of a few boards, like bed-slats, laid across the forward lockers, and the cushions and our blankets over these, and though both of us have slept more comfortably, we have rarely slept sounder, nor (to quote the port watch) snored louder.

We left Bristol, Pennsylvania, August 14th, at 5 A. M. in a light fog, and carried three guests with us as far as Philadelphia. After landing our guests we cut over to the Jersey side to dodge the ferries and their swells, and took our real departure and set the watches. It wasn't really necessary to do this, but as we had gathered our nautical knowledge from reading Clark Russell and Frank T. Bullen, we knew it was the proper thing to do. As, however, our watches were only two minutes apart, and we had nothing to set them by, the writer took the starboard watch (because he felt he was right), and the Doctor took the port watch (as that was all that was left), and both watches were called on deck and remained so for the cruise —the starboard at the wheel and the port at the engine. Our course lay down the Delaware, past the Navy Yard, Billingsport, Gloucester, Chester and Wilmington, to Delaware City (68 miles from Bristol), and with the good little Lozier running like a clock, we tied into the lock at 2:30 p. m. Here the Canal Company held us up for $4.00 for a trip of 13⅝ miles to Chesapeake City, and we were cautioned not to exceed 4½ miles per hour under penalty of $20 fine. As we could not hold her down that slow, we tied a heavy galvanized bucket to a 25-foot towline and threw it overboard, where it pulled back like a horse and held her nicely.

The Canal is picturesque and has mile-posts all the way, so you can see just what you are doing.

From Chesapeake City we ran down Back Creek 5½ miles to Randalia, at the entrance of the Elk River, where we anchored for the night, and next morning got under weigh for Rock Hall. Down the Elk is beautiful sailing, and the Chesapeake opens out a sailor's paradise, with plenty of harbors to run into for a small boat—say of 3' draft, or less.

Our course lay past Betterton, Still Pond, to Tolchester, and here at high noon the Chesapeake opened up her "Pandora's Box" and treated us to four rousing thunder storms in quick succession, two so fierce that we were forced to anchor, and then finished up with an evening so beautiful that you wouldn't believe she could act so mean.

Our destination at Swan Point offered safe anchorage, good bathing, crabbing and fishing, and good living,—and so cheap that you could hardly believe it.

On the return trip it pays to wait at Delaware City for the flood tide. We covered the nineteen miles from Delaware City to Wilmington in one hour and twenty minutes, nearly twice the normal speed of the boat.

Below follows the expense account, to prove that one dollar a day cruising is not a myth, and if you can take this trip and not like it, cruising is not your sport.

40 gallons gasoline	$5.20
Canal toll	8.00
Provisions	18.30
	$31.50

A. M. KEEP, Bristol, Pa.

A Short Fishing and Clam Bake Cruise.

THIS is a little trip on the north shore from Boston, that can be made in a few days time, being only 4 hours sail from Boston. This trip can't be beat for the time it takes, all the pleasures of a cruise within a short distance. It is a beautiful sail to Gloucester. On reaching Gloucester we sail up the harbor to what we call the left hand corner. Don't sail up by the wharves. The entrance to the Squam River is very difficult to locate and it is a good plan to follow another boat. The river is very well marked by large black and red tripods; follow these markers and there will be no trouble. A half hour's sail will take you through this very pretty river.

Near the mouth of the river on the right at the Annisquam Yacht Club, you will see Lobster Cove. Keep over towards the Club House, and then turn sharp to the starboard, as there is a mud flat makes out across the opening. Sail up near the bridge and anchor. It is so quiet in this cove that you will think your boat is on dry land. There is a float and post office at this place.

On the left bank of the river opposite Lobster Cove is a fine beach for bathing. Sail out of the river, keeping near the right bank until you pass the lighthouse; over the port bow will be seen black and red spars; pass between these and over to the port about 2 miles will be seen black and red spars which mark the entrance to the Essex River.

Sail in between these spars, keeping near the left bank and at the first turn of the river you will see a sand flat nearly one-half mile square. This flat is where we dig the finest clams ever uncovered; large as your hand and shells like pearl and a flavor that is in a class all by itself.

As the tide is now coming in, we take the broken clams for bait and go fishing. Sail out of the river and when you pass between the black and red spars, over to the port, about 2 miles away will be seen black and red spars that mark the mouth of the Ipswich

River. Fish off these spars and "everybody's" happy. If your time is short, sail back into the Squam River and after the first turn the river on the right you will see a small stream, going up toward a grove and ledge: This is O. K. at highwater. Sail up here to the old granite pier and go ashore and have your clambake. There is plenty of rock weed in the Squam River opposite the mouth of this small stream.

You will find this trip as chock full of pleasure as the shell is full of clam. Remember these pointers as we were two years finding them out.

I could tell you how to extend this cruise up the Merrimac River which is one of the most beautiful sails there is, but the Editor says 500 words is the limit.

F. R. WATERMAN, Medford, Mass.

Schuylkill River and the Canals.

ONE of the most delightful trips that can be taken in a small boat, is from Philadelphia to Port Clinton, by way of the Schuylkill River and canals. For those who like camping and enjoy natural scenery in its rugged beauty and wilderness, the trip cannot be surpassed. As the river and canals are navigable to all boats not drawing over five feet six inches of water, the only reason this trip is not more popular is because it is almost impossible to obtain information with regard to the channel and lock-passes.

For the sum of $6.00 a lock-pass, good from Philadelphia to Port Clinton and return, can be purchased from the Schuylkill River Navigation Company, whose Philadelphia office is in the Reading Railway Building, Ninth & Green Streets. However, they do not publish a map of the river, so one has to depend upon information picked up along the course. This is often indefinite and unsatisfactory. Having made the trip a few weeks ago, I will outline the channel from Philadelphia to Reading, which information we obtained from the lock-tenders, etc. The Schuylkill channel, as far as the Fairmount Lock is given on all government maps of the Delaware River, so I shall begin the description at that point.

From Fairmount Lock to the next lock at Manayunk, the run is mostly through park and their regulations require that all boats run up on the east side and come down on the west side of the river. As the canal boat channel follows the west shore, one can stick to these regulations in coming down streams, but not entirely so in going up stream. In going up stream one may run almost anywhere on the eastern side as far as the Park Trolley Bridge (fourth bridge from Fairmount Lock), with exception of a few places generally marked by black and white striped buoys; but after passing this bridge, keep about ten feet from east shore to end of cemetery wall, whence cut diagonally across to other side of river, passing through first arch of railway bridge. Follow this side about ten feet from shore to mule bridge at Manayunk. Cross diagonally to lock. Pass through lock to canal, to Shawmont lock, to river. Follow starboard side of river about twenty feet from shore, to white-washed board opposite Lafayette Island. Cross to buoy, rounding on starboard side. Pass remaining buoys on same side to Conshohocken lock. Run through canal to river. Follow starboard side of river about twenty feet from shore to mule ferry. Now cross to Bridgeport lock. Run through canal to Norristown. Canal-boat channel follows port side of river but river is navigable almost anywhere. If crossing to opposite side, run between buoys placed between island and dam. Next lock is on port side of river at Port Kennedy, from whence channel follows same side about twenty feet from shore, to Paulas lock above Valley Forge. Follow port side of river to mule ferry, passing buoys on inside. Cut diagonally across to starboard shore, through second arch of bridge to Browe's lock. Now through a four mile stretch of canal (minimum time allowed 50 minutes), to Flat Rock lock. Follow starboard side of river to derrick. Cut diagonally across to other side, passing between either first or second arch of mule bridge and follow next two on outside, to lock at Cromley. Then through five mile canal (minimum time allowed 1 hour), to Tower's lock, thence through short stretch of canal to river; following port side of river to lock at Parkerford. Now through one to next lock. Run through nearly two miles of same canal (time 20 minutes) to Frick's lock. Continue through five mile stretch of this (time 1 hour 5 minutes), to next lock at South Pottstown; through eight mile stretch of same canal (time 1 hour 45 minutes), to Bridsboro lock; through six mile stretch of same canal (time 1 hour 30 minutes) to lock at Seyfort, then to river. Follow port shore, keeping well away, to mule ferry. Cut diagonally across to starboard side of river, taking buoys on inside, to lock below Reading. Follow starboard shore to island. Turn up smaller channel, passing buoys on inside to lock that opens on to Reading Canal.

ROBT. W. KREWSON, Philadelphia, Pa.

A chart of Mr. Waterman's cruising ground near Gloucester.

New York to Greenport by the Great South Bay Route.

THE above cruise was made last summer by a party of which I was a member, and which was enjoyed more than any other cruise I ever made. The real beauty of the trip is that there are very few boats make it. The one drawback to the trip is the lack of deep water in some parts of Great South Bay, but as we were drawing more than three feet, and came through all right it seems that others could make the trip with just as much enjoyment. Below I will attempt to locate and describe the places that will most interest the cruising man.

Shoal Spots:—The spot where the most trouble can be expected is between Long Beach and Babylon. There are a number of Islands separated by narrow channels that are apt to confuse the novice, but if attention is paid to the chart of that section the work is much simplified. The run from Coney Island to Long Beach Inlet is only about ten miles, and is the only outside run of the trip. Long Beach Inlet is not difficult to run, but the best way is to follow some of the fishing boats, that are constantly going in and out, through. Smiths Point at the easterly end of the Bay is the only other spot that should give any trouble.

Good places for nights stay:—At Babylon there is a good harbor and fine anchorage off the yacht club. At Patchogue there is a good harbor and plenty of room alongside the banks of the river. The mouth of the second creek to the Eastward of Senix Creek is a fine place to lay up, and a trip up the creek in a rowboat or canoe is a delight for the lover of nature. The hunter can find almost any kind of wild fowl that inhabits the region along shore. Crabbing is also good here. Ogdens Pond at Quogue is one of the prettiest spots imaginable. There is good fishing, bathing, canoeing, and in fact all water sports, as the ocean and Pond are only separated by a narrow strip of beach. Canoe Place, in the Shinnecock Canal, is a fine place to lay over. Greenport is a large town with fine anchorage in Sterling Creek and all conveniences. This town is the easterly terminus of the run.

Gasoline and repairs:—These can be obtained at Wreck Lead, Babylon, Patchogue, Quogue, Riverhead and Greenport.

Long Island R. R. stations near water:—Quite often it is necessary to run back to the grind of the city for a day, and it is handy to know where you can make connections. At Wreck Lead there is a station within walking distance. At Babylon you can either walk or take a trolley direct to the station. At Patchogue a trolley makes connections. At Quogue it is necessary to take an auto from the post office, which is within walking distance of the water, in order to get a train. There are several stages that meet trains from New York, but they do not connect with West bound trains except early in the day. There are stations at Riverhead and Greenport near to the water. Post offices are usually near to the railroad. Fresh water can be obtained at any of the places mentioned above. At the stop near Senix a trip up the creek is necessary for water and supplies. Both must be gotten from private houses.

Side trips from Babylon to Fire Island and from Greenport to Shelter Island are pleasant. Don't take as the truth all the natives tell you about the water in their vicinity. Don't attempt to run any harbors at night, and don't get discouraged if you hit the sandy bottom a couple of times.

Don't go without Government charts Nos. 118, 119, 299.

ARTMAR A 60 Footer

A 60-Foot Cruiser of the Raised Deck—Trunk Cabin Type Designed and Built by Frederic S. Nock for Mr. C. M. Dunbar and Powered with a 70 H. P. Jager Engine.

ARTMAR, a 60-foot cruiser, designed and built this year by Frederic S. Nock, of East Greenwich, R. I., for Mr. C. M. Dunbar, of Providence, R. I., is one of the season's best examples of an able cruiser and excellent sea boat. The photographs shown give an excellent idea of her lay-out and arrangement and the lines show a hull with a fairly full body, sharp entrance, ample reserve buoyancy with a moderate amount of flam, giving her a good appearance and assuring a fairly dry boat. The after sections, while fairly full, are of sufficient buoyancy to prevent squatting by the stern, yet at the same time are fine enough to assure being easy in a seaway. The midship section shows considerable deadrise, but with ample initial stability.

The construction of the hull is very heavy throughout, the keel, deadwood and frames being of oak, the latter 2" x 2" spaced 12 inches on centers with yellow pine 1¼" planking. The bilge, deck and other clamps are of ample dimensions of yellow pine as are also the main and sister keelsons. The engine bed is of oak sided 4 inches and is set inside of the sister keelsons and securely bolted through same to the keel and to the heavy floors.

Aft of the engine room is a quadruple bulkhead, the two inner thicknesses being of strakes, laid diagonally. The main deck beams are of oak, sided 2", moulded 2½". The deck plank is of cypress, 1⅛" thick, covered with canvas. There is a double bulkhead forward of the engine room, which, as shown in plan, is situated amidships. On each side of this are the gasoline tanks, which are of heavy steel, fitted to the side of the boat, well riveted, and galvanized after being riveted. These tanks have a capacity of about 225 gals. each.

The power plant is a 6-cylinder Jager engine, 6⅜" bore, 8" stroke, developing 70 h.p. at 500 r.p.m. The engine room is equipped with a work bench, two pipe berths, sink, tool lockers, waste lockers, diaphragm bilge and deck pump, crew's toilet, etc. The engine is controlled from the bridge deck, the controls being brought up within easy reach of the helmsman. The forepeak is arranged for stowage of chain and in the space between the chain locker and galley is a large icebox with an ice capacity of 350 lbs.

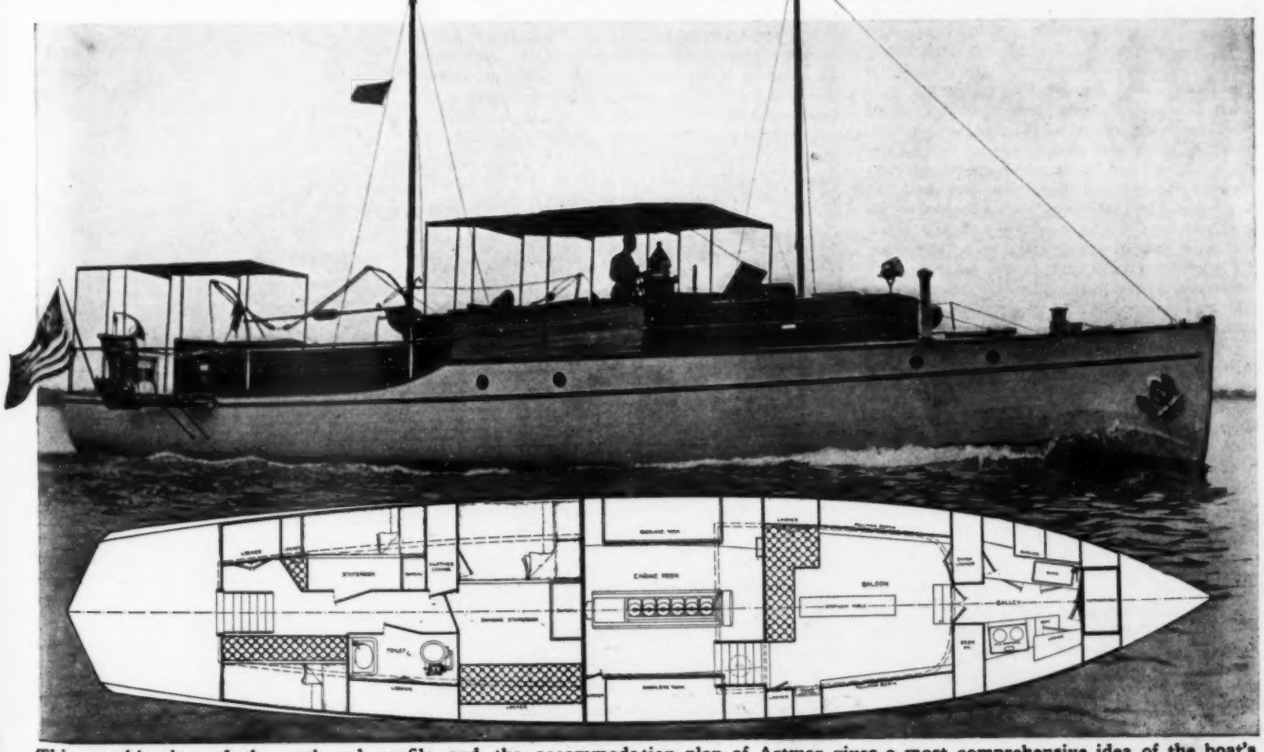
The galley is 5 ft. 6 in. in length and on the port side there is a locker the entire length, with sink, dish lockers, space for cooking utensils, etc. On the starboard side there is a Shipmate stove, provision locker, shelves, etc. The galley opens directly into the dining saloon and at the forward end on the port side there is a china cupboard and dish locker, also linen locker. The dish locker can be opened either from galley or saloon. On the opposite side there is a desk, wine locker, etc. On either side is a Pullman berth and at the after end a transom seat. At the foot of the companionway steps is a small built-in lavatory and additional linen locker. An extension table, 4 x 6 ft. is placed in the middle of the dining-room. The finish is all mahogany, with the exception of the panels of the under side of the trunk deck, which are of fancy gum with mahogany moulding.

Aft of the engine room are the owner's quarters. Next aft on the starboard side is a large toilet room and on the port side, a single stateroom with berth, bureau, wardrobe, seat, etc. Aft of this stateroom is a large locker for storage of miscellaneous articles. On the starboard side of the companionway is a berth with a transom seat. Under the lazarette are the main water tanks, the acetylene lighting tank, and ample storage space for chairs, etc. The general finish of the after quarters is white enamel and mahogany trim.

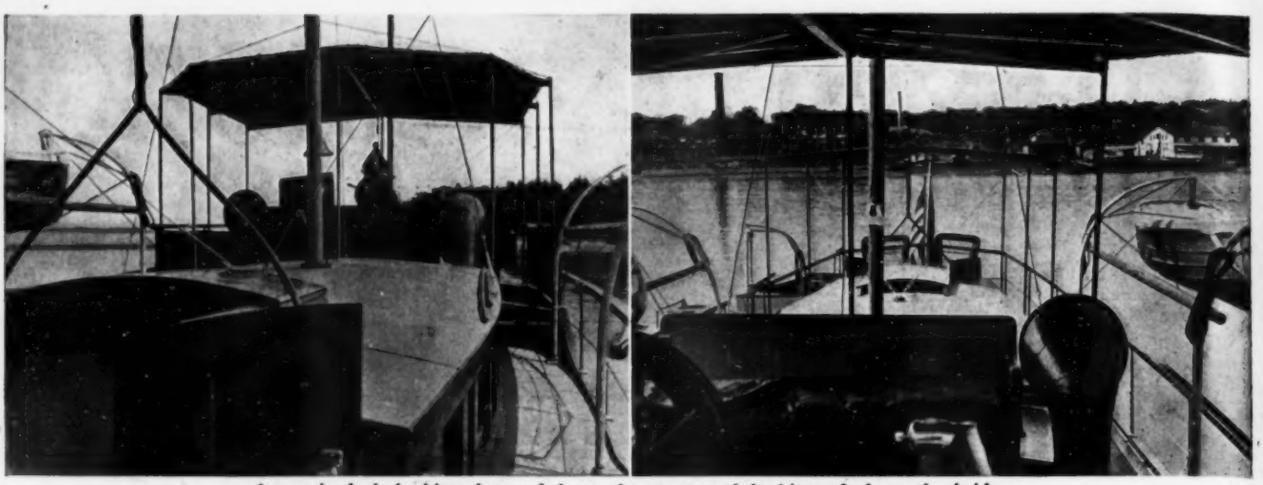
The plumbing system is well taken care of, the two main tanks under the after deck filling two auxiliary tanks under the dining saloon and from thence to the galley, engine room, saloon and toilet room. There is also an auxiliary gasoline tank under the saloon floor to be used in case of emergency. This is of about 100 gals. capacity. The lighting system is acetylene and electricity.

The topsides of the boat are finished in a soft grayish color which makes a pleasant appearance in conjunction with the mahogany trunks and buff-colored deck. She carries two tenders, a small rowing tender, and a small sailing tender on the davits.

While carrying two spars and rigged for sails, they have not been used this season, although the boat has been through some very heavy weather.



This combination of the outboard profile and the accommodation plan of Artmar gives a most comprehensive idea of the boat's arrangement.



Artmar's deck looking forward from the stern and looking aft from the bridge.

The Peter Pan Family.

The Story of Mr. James Simpson's Famous Line of Motor Boats Which Have Been Prominent in the Making of Motor Boating History.

Mr. James Simpson.

THE beautiful play of J. M. Barrie, made famous throughout the land by the charming actress, Miss Maude Adams, is originally responsible for the naming of a family of motor boats as famous as the play itself. Aside from any reason for its selection, the name Peter Pan has a pleasant ring. Shakespeare said "What's in a name? The rose by any other name would smell as sweet." But he knew in his day, as we know in ours, that a name may be particularly fitting, and a name will catch with the popular fancy. All the "Dixies" from Dixie I to Dixie IV were popular favorites. And the name itself contributed in some degree to their popular esteem. The Dixies were Champions. The name did not make them so, but being so it seemed eminently fitting that the Champion was Dixie. And so with Peter Pan.

On Lake Hopatcong, a mountain lake of Northern New Jersey, Mr. James Simpson, the owner of the motor boat family of Peter Pans made his summer home. The joy of the children in the play of Peter Pan inspired the naming of the place Never-Never-Land — the fairyland of the Barrie play — and his motor boat (the first of the family) was Peter Pan.

The Peter Pan family, in the succession of better and faster boats, affords an illustration of development and progress in motor boats during the past few years.

Ten years ago there were on Lake Hopatcong not to exceed one dozen launches, the fastest of which was probably not over eight miles an hour. Now, on this small lake, 9 miles long and about 2½ miles wide, there are approximately five hundred. Then years ago the gasoline launch was well nigh a joke. There was at that time the old reliable naphtha launch of the Gas Engine & Power Company, the engine of which operated substantially on the principle of the steam engine. Turning about 300 revolutions a minute these were not capable of speed. They were, however, thoroughly reliable, and some of them are still in use. But the ordinary "chug chug" — a rather crude affair of the two-cycle type — was more of an annoyance than a pleasure.

The first experience in motor boating of the owner of the Peter Pans was with one of these — never mind the name, for Peter Pan, neither play nor boat, had yet been born — and once in a while it ran and twice in a while it stopped and ran again when it got ready. Through one summer the suffering was endured, and during the next two seasons some genuine pleasure was had with a good old Morris Heights naphtha — a comfortable and roomy 21 footer with an engine of 3 horse power, and the dazzling speed of about six miles per hour. Then came Peter Pan. It seems a long step from Peter Pan of 14 miles an hour to Peter Pan of 46, but the whole line of Peter Pans cover a period of only five years.

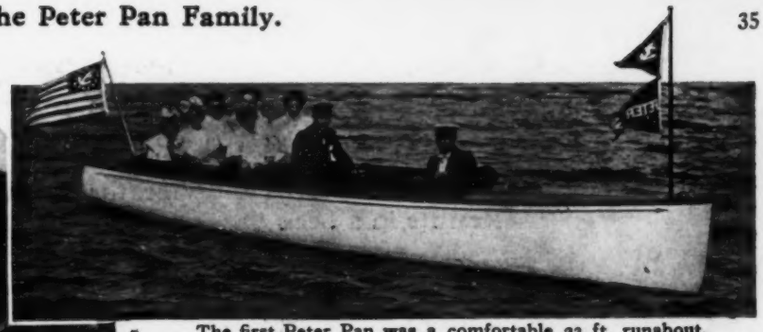
The first Peter Pan was a comfortable runabout 23 ft. long powered with a four-cycle motor of 12-14 h. p. and with a carrying capacity of eight persons. She had a speed of 14½ miles per hour, and though there were four other craft on Lake Hopatcong of greater speed Peter Pan I was a favorite, and in handicap races she won the prizes. She finished first as many times as she ran and won all five trophies.

The appetite was whetted now, and the following season the beautiful mahogany 28 footer appeared — Peter Pan II; and then began the fame of the famous family. There were now on the Lake a dozen boats of real speed and the racing game of 1909 was keen and spirited. Peter Pan II won the championship and carried a champion pennant. A vast improvement over Peter I, this one equipped with 35 h. p. made a speed of 23 miles, and won six trophies, one of them a non-stop race of 100 miles. The fame of Peter Pan II spread far and wide. It was not only the speed of the boat, but her beauty, her graceful lines, and the fact that she was what might be called a family boat, carrying eight persons in comfort.

The feature of pleasure and comfort was adhered to in the next of succession, Peter Pan III. The champion of 1910 was of surpassing beauty — all mahogany with the polish of a piano. Her length was the same as the Second, but of wider beam. Her seating arrangement consisted of two thwartship seats with upholstered lazybacks and four wicker arm chairs in the cockpit. Her appointments were luxurious, with electric signal horn and electric sailing lights—in all respects a modern automobile, and withal a racer that hung up new records. She looked out of place against racing machines like the famous Vim and Gunfire II, but with the same power as these (40 h.p.) she showed her stern to all competitors, and finished first every time she ran. On Lake Hopatcong where she won three races she had no serious competitor. In September she came to the Hudson River for the National Carnival and established a new record in the race

Peter Pan V, the 20-footer that was built for the International Races and was so successful on the Hudson River.

Peter Pan, Sr., the day cruiser that won the Class E series race and the race to Peekskill and return during the carnival, setting a new record for both events.



The first Peter Pan was a comfortable 23 ft. runabout.

The famous Peter Pan IV.

The fame of the Peter Pan family started with Peter Pan II.

With 40 h.p. Peter Pan III did 133 miles at 25 miles an hour.

from New York to Poughkeepsie and return, doing the 133 miles continuous run at an average of 25 miles an hour. She ran one race in full dress, carrying besides the regular crew of driver and mechanician, four young ladies in middy blouses, affording them a pleasure ride of 30 miles at 23 miles an hour. It was so easy to win, why not have a joy ride?

But improvement was possible even on the same lines, and notwithstanding that the advent of the hydroplane threatened to leave no chance for a boat of comfort to gather racing laurels in 1911, the New York Sun, following her initial run, had this to say of the next Peter Pan:

"The Peter Pan IV, owned by James Simpson, made her racing debut on the Hudson River June 10th. This little boat, only 26 feet over all, can go more than a mile an hour for every foot of her length, and has already attracted lots of attention. Many interested in the motor boat game have been waiting to see whether Peter Pan IV would prove as successful as her famous predecessors, the other Peter Pans, all of them champions of note, especially Peter Pan III. There is no doubt in the minds of her owner and builders as to how good a boat they have made, for with the same power as Peter Pan III, 40 horsepower, but with more beam and two feet less length, this new boat went two miles an hour faster in her speed trials. Motor boat lovers now know that a boat may be comfortable and beautiful as well as fast. The principle is exemplified in Peter Pan IV, which is no racing machine. Six persons may loll at their ease in the cockpit and need not wear waterproof clothing."

Peter Pan IV, however, was a departure in one respect—her underbody. At rest in the water she looked like her immediate predecessor. It was the same graceful lines with "tumble home" stern and rounding transom, but she did not cut into the water and throw up the spray like the others. She didn't make the fuss. She "ironed it out." The V sections were concave instead of convex, being pronounced forward, but graduated to an almost flat surface at the stern. It was practically the principle of the hydroplane applied to a displacement boat, and preserving the feature of comfort, which Mr. Simpson insisted on having. It was not pure racing that was wanted; all the speed possible, yes, but pleasure and comfort with it. She was splendidly appointed like the others, with upholstered lazybacks and wicker chairs. This Champion of 1911 won ten trophies, three of them in races "free for all"; and also won the title, "Champion of the Hudson River."

At the close of 1911 the advance of the hydroplane made further development of Peter Pans along the established lines practically impossible. If a real racer was wanted the beauty and comfort that excited universal admiration had to be abandoned. But still it was possible for Mr. Simpson to have another champion Peter Pan that would be a thing of beauty, afford pleasure for family and friends, and outfoot anything in her class. So the day cruiser, Peter Pan, Sr., was ready for launching in the spring of 1912. This magnificent mahogany 40-footer, luxuriously appointed with every convenience for cruising, has hung up a new record—the long-distance race from New York to Peekskill and return. Peter Pan, Sr. won the National Cabin Championship, the Long Distance Championship; and also the Commodore's cup at Columbia Yacht Club. Fancy a party of a dozen or more taking an outing up the Hudson to West Point at the speed of the fastest steamers and with equal comfort! Peter Pan, Sr. made the trip from 86th Street, New York, to West Point and back (almost 100 miles) in five hours. But this cruising boat is a real Peter Pan. It is in the order of progression. It is really Peter Pan III enlarged, with a cabin uniquely fitted with Pullman berths, toilet and lavatory room, buffet cabinets, etc., and equipped, not like regular cabin cruisers, but with high-speed motors like an automobile.

Heretofore the motors of the Peter Pans have been of moderate power, simply four cylinders of 40 h.p., but in the racer of 1912—the now famous Peter Pan V, the winner of the International Championship—the motor was an eight-cylinder Van Blerck of 150 h.p. The performances of this little marvel of speed have been told already. To many it was a keen disappointment and matter of surprise that she was not selected by the committee of the Motor Boat Club of America for the defense of the Harmsworth Trophy. It seems too bad that this last of the illustrious family of Peter Pans was not given the opportunity. She has never been beaten. In the races immediately following the B. I. Trophy races she ran five days consecutively in the National Carnival. She beat the Famous Tech, Jr., and in this race the speed was estimated at 46 miles an hour. She won the series (three races of 30 nautical miles each) for the International Championship Trophy, the Free-for-All open to the world and unrestricted in power or size, and the Mile Championship, three times with and three times against the tide.

There are other members of the family. A 21-footer, Peter Pan, Jr, was the champion of Lake Hopatcong, 1911. Mr. Simpson's family left the lake in the fall of 1910, and took to the salt water of Long Island Sound for a summer home, and while Peter Pan IV was doing service on the Sound, the little Junior, capable of 24 miles an hour, turned a trick or two for Never-Never-Land. Tinker Bell and Wendy, named after the characters in the play of Peter Pan, figured on Lake Hopatcong and Tinker Bell II at Shippan Point on the Sound. The Tinker Bells were owned and run by Mr. Simpson's daughter. And there is still another—Peter Pan, Esq., a 25-foot runabout, which captured the Free-for-All of Hud-

(*Continued on page 48.*)

Peter Pan Jr. tearing it up on Lake Hopatcong.

Mistaken Economy.

The Fallacy of Saving a Few Dry Cells and Vibrator Points by Cutting Down Amperage which Results in a Lean Spark and Lowered Engine Efficiency.

By E. T. Keyser.

"BILLY," said the novice, as the ex-pirate appeared on the float, "I wish you'd go aboard the Soaking Sioux and tell me what's the matter with the engine."

"What's the matter?" asked the ex-pirate, "Won't she run?"

"Oh, yes, she runs—but she doesn't seem to have any more real enterprise and push to her to-day than an office boy the day after the church picnic, and I'd like to see if you can't put a little ambition into her."

Ten minutes later, the dinghy was alongside of the novice's boat and the ex-pirate was turning over the fly-wheel.

She started all right and, as she continued in a half-hearted desultory sort of way, the ex-pirate advanced the spark, gave her a little more gas and then began to screw down the vibrators on the coil—an eighth of a turn, and the engine seemed to brighten up and take notice; a quarter-turn, more improvement; a half-turn—"Well, that's something like it," said the novice, "that's the way she ought to run all the time, but Great Scott, man! do you realize how much amperage you are using with the tremblers set that way?"

"Why, how much do you figure?" asked the ex-pirate, with a grin. "I'll tell you in a minute," said the novice, as he threw the switch, produced a low-reading ammeter, threw the switch on and started the engine again. "You are taking 9/10 of an ampere, but you're running those batteries down and you're burning off the vibrator points. I took an hour fussing with those points, getting down where it didn't take half an ampere of current."

The ex-pirate selected the most comfortable-looking cushion in the boat, and leaning back, proceeded to fill his pipe. The novice threw off the switch, for he saw some conversation was coming and didn't want to miss any of it.

"My son," said the ex-pirate, "you make me think of the man who shuts down the pressure of his water main to reduce bills and is surprised when he can't get water above the first story; likewise of the gentleman who stuffs his gas pipes full of cotton, shuts down the pressure of the meter, and then cusses because he has to light three gas jets by which to figure out the saving in his gas bill. Just get it right into your system that this is a world in which you can't get something for nothing, and the sooner you stop trying to do so and the sooner you realize that you've got to pay for every blessed thing you get and that, within reasonable limits, the more you pay the more you get, you'll be happy. Your electric system is just the same as your water or gas main. If you turned off your supply altogether, you wouldn't have any bills to pay, but you wouldn't have any water, any gas or any ignition."

"Yes," said the novice, "that's all right; but it's one of the fundamental principles that have been knocked into me that we mustn't use over half an ampere for ignition purposes."

The ex-pirate took a long puff at his pipe, and slowly exhaled the smoke through his nose. Then he grinned.

"True, my innocent friend, that's what I used to believe myself, and the way I sat down with a low-reading ammeter and let up on my vibrator points till the indicator said one-half ampere, was a crime, and the way my engine acted after I had finished bore a strong family resemblance to the lassitude of your own power plant. Now, here's the point: if you don't put current through those coils, you don't get a good hot spark at your plugs, and if you don't get a good hot spark and you do get the least variation, one way or the other, in your mixture, and a variation so fine that neither you nor I nor anybody else can conquer it, there are sure to be bad results. On the other hand, if you make dead sure that you have enough juice to explode a mixture that's a little bit off one way or the other, you're dead sure that the old engine will keep doing her prettiest under almost all reasonable conditions."

"Yes," said the novice, "that listens good—it listens awfully good—but do you realize when I'm putting an ampere through those coils what I'm doing to my points and how I'm pulling down the batteries?" "I sure do," said the ex-pirate, "but did you ever realize that batteries were made to be run down and that vibrator points were made to burn up, and that if you don't use up one and burn the other, you're not going to get any movement? If you want the boat to lie at anchor all the time, what's the use of buying a motor? When you figure out what batteries cost and then figure out the small amount of money represented by a few extra vibrator points, during the season, and set this up against the comfort of having a boat that jumps right along and keeps on jumping, I think you'll realize that it's good economy—just as good economy as it is to shovel an extra ton of coal into the furnace so often as to create the difference between a chilly house and a warm, comfortable one.

"That low amperage game is what has stung us all—it stung the coil manufacturers for a long while, but I notice that some of them have stopped talking about low current consumption through their coils, although they *can* be made to vibrate on considerable less than a half ampere.

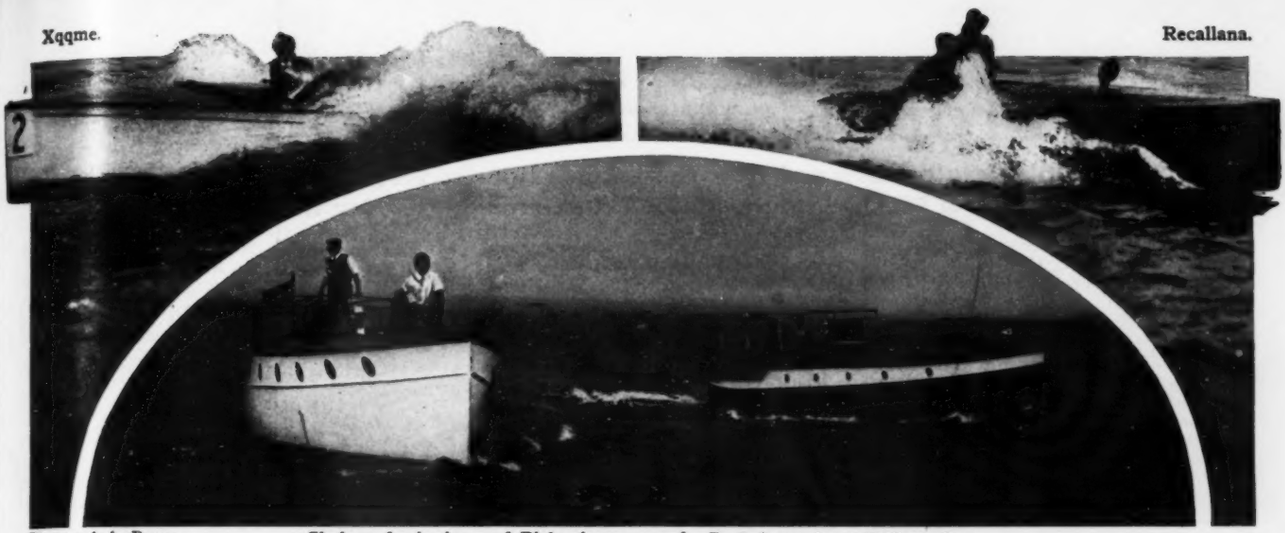
"But," said the novice, "isn't it the voltage does the work?" "It is not," said the ex-pirate. "Do you realize the fact that when they electrocute a man, they don't pass many more volts through his system than rambled through you the other day when you leaned up against your spark plugs, but the vital difference—and to the gentlemen at Sing Sing, the fatal difference—is the fact that where less than one ampere explored you, six or more were used up the river? For instance, spill a drop of boiling water on your arm and you'll jump, but you've forgotten about it in a very short time. Dump a barrel of water of the same temperature on you and you're apt to figure in the obituary columns of the next morning's paper. Ignition is a matter, not only of quality, but also quantity, and you can shove such a small quantity of current through your wires and coils that the least trouble with your wiring, a little unnoticed corrosion on your terminals, extra high compression, or a dozen other things, will so reduce the volume of that spark that it won't fire even a good mixture. This is one of the reasons for the great popularity that the magneto has attained during the past few seasons.

Many people who use magnetos do not accurately figure out how they get so much better results than with batteries, but you see if a fellow could really obtain satisfactory results all the time on a half-ampere of current, two 6-cell batteries connected up in multiple series would come pretty close to lasting a whole season of Saturday and Sunday runs, at a cost of about $3.00.

But the fellow who started out with about a half-ampere and didn't like the result, gradually kept tightening up his coils and taking more amperage. This pulled down his batteries a lot and, not only did he have to renew them, but very often his batteries went back on him in a long run. He didn't figure that it was a case of going on higher amperage than he had figured on and that he was temporarily pulling down his batteries by so doing. He simply figured out that dry batteries were unreliable, which is not so, and that a magneto had a special kink which gave a hotter spark. The fact was that the magneto's voltage and amperage were constant and that it could keep running all day and all night, and as long as he kept his vibrator points properly smoothed down and his spark plugs cleaned, he'd get just as good a spark at the eleventh hour as he did at the first, which is not the case with dry cells."

"But I don't want to use a magneto," said the novice. "All right," said the ex-pirate, "you don't have to; it's a mighty good thing to have, but if you are wedded to the dry-cell principle, just recollect you bought those dry cells to use. Don't try to save them up for your boat for next season; use them up and get more. Carry a few extra vibrator points with you and when the ones you have give out, put the new ones on. Figure it all up for the season's expenses, and I guess you'll find you're not so much behind the game financially and will experience considerably more satisfaction from the running of the engine."

The motor ship, Christian X, of the Hamburg-American Line, leaving her pier in the Hudson after her recent visit to New York. She is a sister of Selandia, described in the April issue of MoToR BoatinG.



Photographs by Pearce.

Chelwood winning and Pickaninny second. Both boats have Hall engines.

Racing on the Delaware River.

Two Close and Well Handled Events for the "Record" Trophies that Practically Close a Most Successful Racing Season on the Delaware.

By E. H. Rosenberger.

CHELWOOD, the trim raised deck cruiser of Rufus K. Lennig, flying the pennant of the Yachtsmen's Club, of Philadelphia, again holds the championship speed honors for cruisers measuring between twenty-eight and forty-five feet, on the Delaware River. The Yachtsmen's Club, the clearing house of the motor boat and yachting clubs on the Delaware and Schuylkill Rivers, and the South Jersey Coast will be the repository for a second time of the Record Trophy, which is the trophy for the final and championship cruiser races of this class open to representatives of any club belonging to the Delaware River Yacht Racing Association, or the South Jersey Yacht Racing Association.

The Philadelphia Record last year offered two handsome trophies to be raced for each year at the close of the season, over courses on the Delaware River; one for speed boats, and the other for cruisers of the type named, and to be held by the clubs whose pennant was carried by the winning boats. It was this trophy that was contested for the second time by twelve cruisers on the sixty-three nautical mile Delaware River course from Wilmington to Ship John Light, in the lower Delaware, and return, on Saturday, September 21st.

The contenders were as pretty a fleet of cruisers as ever entered into a race, nearly all being boats of the raised deck type, and boats which had won a distinction in the many club races during the last two years. The winning of the trophy by the Chelwood was by no means a walkover, and there was no outclassing of boats. Rufus K. Lennig, every inch a sportsman, after the race declared that it was a contest of contests. Right here it is fair to say that the race was one of the most closely contested races held this year, as may be seen by studying the summary of the race. Twelve boats started, and twelve boats finished, crossing the line in one, two, three order. The twelve boats finished within fifty-five minutes' time.

The feature of the race was the chase of the Chelwood to overcome the time allowance handicap of nearly three minutes which she was obliged to give to the Pickininny, the boat which Mr. Lennig says is her most formidable rival, and which he says gave him a tussle that was a sight to behold, to gain first place. Coupled with this fight for first place was the speed of the Haji, which is another boat of the Camden Motor Boat Club which refuses to allow the Chelwood to have her own way. Right here it may be interesting to note that so much interest was manifested in this contest, that Peter Hall, the maker of the engine of the Chelwood was in charge of the power plant, and to this is contributed whatever slight advantage may be had from his services; yet it detracts no glory from the performance of the Yachtsmen's Club boat. Yachtsmen credit her with having the lines, the power plant, the seamanship of a trusty crew, and all other attributes that go to make up consistent racing.

In the race down the river and bay the Chelwood overtook the Pickaninny just before turning Ship John Light. When rounding the light the two boats were not two lengths apart, and after entering into the home stretch the Pickaninny gained enough advantage over the Chelwood to get the lead a second time, but only temporarily. From thence on up the bay and river it was one continuous performance, the Chelwood again taking the lead and crossing the line at 4.27.24, with the Pickaninny following at 4.31.05.

The race was handled from the pier at the Wilmington Yacht and Automobile Club, and the first boat was started at 8:30 A. M. in the morning. The boats gave the committee and the crowds a surprise, inasmuch as they made the return in an hour less than the time figured out by the experts. The morning dawned bright and the racing conditions of the day were ideal, except that just before the finish a stiff breeze began to blow from the northeast which kicked up a lively, choppy sea, making the going that much more heavy. The leaders in the race did not get much of this, but those farther back had to contend with a rough finish, to which may be attributed some loss, to an otherwise extremely close finish.

The following is a complete summary showing the various details that entered into the character of the boats, their power plants, showing the start and finish with handicaps, and elapsed and corrected time, making all told an interesting study.

The Record Trophy for speed boats was won by the Xqqme, owned by J. C. Vanderslice, of the Camden Motor Boat Club, in an exciting race over the Delaware River course of thirty-six nautical miles on Saturday, September 14. The course is from the Camden Motor Boat Club to Riverton and return.

There were five entries, two of them being hydroplanes and the others being displacement speed boats. The hydroplanes being the Chelsea Special, of Atlantic City and the Alparnel, Jr., a new speedster owned by Commodore R. P. Smith, of Tacony. The Alparnel, Jr., was caught in the swell of a passing steamer in rounding the stake and was swamped, necessitating her withdrawal from the race. The Chelsea Special made an error in navigating the course and cut two of the buoys, causing her to be disqualified. The Chelsea Special made the run of thirty-six nautical miles in 1:23:10. The Xqqme, which won the race, made the course in 1:35:05.

Complete Summary of "The Record" Trophy Race for Cruisers.

Name of Boat.	Owner.	Club.	Boat. Length of	—Power Plant— Engine.	Rating.	Rating.	Time Allowance.	Start, A. M.	Finish. P. M.	Elapsed Time.	Corrected Time.
Chelwood	R. K. Lennig	Yachtsmen's	39-10	Hall	15.84	39.38	1.21.48	9.22.21	4.27.24	7.05.03	5.43.15
Pickaninny	Bell & Taylor	Camden	33-9.7	Hall	13.1	39.07	1.24.36	9.19.13	4.31.05	7.11.52	5.46.36
Haji	H. Dudley	Camden	32-8.6	Sterling	18.32	43.15	46.48	9.57.21	4.38.43	6.41.22	5.54.34
Jenny S.	George Stock	Camden	34-1.5	Hall	15.84	39.24	1.23.12	9.20.57	4.44.43	7.23.46	6.00.34
Tillie A.	N. Ahlers	Wissinoming	35-6.5	Sterling	18.32	43.20	45.38	9.58.31	4.46.46	6.48.15	6.02.37
Reba B. II.	Wilbur W. Bardeer	Camden	35-5.6	Standard	18.84	34.82	2.14.06	8.30.00	4.57.35	8.27.35	6.13.26
Eugenia	E. Swayne	Flat Rock	34	Lion	15.84	30.84	1.17.12	9.26.57	5.00.17	7.33.20	6.16.08
Casino	William Erb	Columbia	36	Hall	31.68	49.50	Scratch	10.44.09	5.08.15	6.24.06	6.24.06
Albatross	James Thompson	Stone Harbor		Sterling	31.00	45.36	28.33	10.15.36	5.11.38	6.56.02	6.27.29
Adois	W. H. Ewing	Wilmington	32-6	Harris	15.84	40.00	1.15.34	9.28.35	5.14.41	7.46.06	6.30.32
Hyacinth	J. Morgan	West End	37-3.2	Tuttle	19.20	43.74	41.54	10.02.15	5.15.52	7.13.37	6.31.43
Colleen Bawn	A. W. Herr	Riverton	41-2	Lion	33.10	45.00	31.49	10.12.20	5.22.55	7.10.35	6.38.46

The Trouble With Ocean Racing.

What the Season's Results Show and How the Vikings Hope to Improve Conditions Next Year. Sir Thomas Lipton Breaks into the Motor Boat Game by Offering the Vikings a Cup.

IT is a hard pill to swallow but we are forced to admit it, that, in general, the racing season just finished has been more or less of a failure, especially as regards ocean races and other heretofore popular long distance events. This admission is heard on every side and even some manufacturers are complaining of the lack of interest in cruiser racing. What is the cause of such back sliding? Several theories are advanced but invariably they are from the same derivation. The present rules come in for their share of the condemnation but the greatest error seems to be the lack of the proper crew restrictions. Owners are everywhere complaining of it, emphatically stating that they are through with racing until there is a general house cleaning.

Mr. Jos. H. Wallace of New York City, owner of the 40-foot cruiser Thistle, which has sailed in as many races this season as any boat we have record of and without a chance of winning under the present rules, has conceived the idea which bids fair to solve the problem. His plan is antagonistic to none, neither barring the professional nor handicapping the amateur. The word amateur always has been a thorn in the side of the sport, a term ambiguous at its best and brim full of dissension. Mr. Wallace coins a new word for the situation or rather an old word with a new meaning and his idea is that a "Viking" shall be to the motor boat racing what the Corinthian has long been in the sailing world.

The idea is not to bar the professional from the races but to offer additional trophies in the same races that may be competed for by boats having only Vikings on board, that is, men interested in the game for love alone, thus giving these boats a chance to win double honors yet not penalizing them with any undue disadvantage. In a recent trip abroad Mr. Wallace spoke to Sir Thomas Lipton of his scheme and it immediately met with his most hearty approval, and in fact so enthusiastic was Sir Thomas Lipton over the idea that he has offered a valuable trophy for a Viking Race next year. It is probable that this will be competed for next year in conjunction with the annual Block Island Race in June. It is by far the most valuable prize that has ever been offered for a race of this kind and should be a great impetus to the sport. The conditions have been left entirely to the Vikings and one may feel sure that they will be such as to promote the building of small able seaworthy boats and the curtailment of the rule beaters. Already several owners have decided to build new craft for this event and we believe we will see the largest entry list this particular race has ever had.

The Viking idea was first put to trial in two of this season's events and although the entry list was small, sixteen men qualified for the order and since then enthusiasm has led them to perfect a permanent organization which if backed by the yachtsmen of this country, as a large number of assurances have seemed to warrant that it would be, we believe cruiser racing will take on new life next year.

The Organization of Vikings was completed during the past month, after several preliminary meetings at which the scope of the organization was discussed, and we are glad to announce at this time that the organization is now a fact, and we believe a very important fact in connection with motor boat racing, particularly the racing of cruising boats in the vicinity of New York for the next year.

The object of the organization, as stated in the Constitution, is as follows:

"The object shall be to promote 'Viking' racing of motor boats; their improvement in design and construction; to formulate rules to govern trials of speed between such boats to promote the spirit of fraternity and good fellowship among yachtsmen."

There w ll be three grades of membership: Vikings; Chieftains; and Honorary Chieftains.

The Vikings will be yachtsmen who sail for the love of the sport, and who are not in any way interested in boats or engines commercially.

Chieftains will be qualified for this degree only by sailing as a member of a Viking crew in a long distance race held under the sanction of the order; the Viking crew being defined as one in which all members are yachtsmen who sail for the love of the sport, and with no paid hands to assist either in navigation or in operation of the boat.

The Vikings propose during the next year to confine their attention largely to co-operation with yachting clubs holding long distance races in the vicinity of New York, but the scope of the organization is such that branches can be established at various points as fast as the idea meets the interest of yachtsmen.

The organization will be in no way similar to a yacht club or motor boat club, of which there are many in good standing; but it is proposed to work with these clubs with a view of establishing classifications, rating and racing rules that shall limit Viking races to boats that are not fleet boats, but are boats built primarily for their practical value as cruising boats.

Announcements will be made in the near future of further interesting facts and the proposed development; but it can be stated here that the N. Y. A. C. Yachting Committee have already decided to hold a Viking Race in connection with the Block Island Race of next year, and it is more than likely that the race to Albany and return will also be held with a Viking class, and suitable prizes are already in view for making these two races the principal events of next year's racing season.

In addition to the regular prizes, those craft qualifying as Viking Ships will be entitled to display the Viking figurehead. This consists of a dragon's head of metal in relief, placed facing forward on each side at the bow.

It would be well for clubs to start planning their schedule for next summer's important events at once and avoid the many conflictions in dates that occurred this summer, proving so detrimental to the sport. Motor Boating is very much in favor of this important move that we believe will be most constructive to the sport rather than destructive which has been the case during the season just ended.

The rating rules and subdivision of classes which the Vikings intend to use in their events next season will be announced shortly but in the meantime it behooves every club to offer every possible assistance to promote this great move and include Viking classes in all of their long distance events in 1913.

Venice, owned by Geo. Joly, Jr., of the Camden Motor Boat Club.

B. F. Gibbons' Meteor, also of the Camden Club.

Toy Yot, owned by E. C. Leedom of the Ocean City Motor Boat Club, and Nereides, a prominent cruiser of the Camden Club.

Many life preservers failed to pass muster.

Motor Craft of all Descriptions Waiting to be Inspected for Licenses to Carry Passengers To and From the Fleet During its Visit to the Hudson.

All the boats whose owners wished to carry passengers to and from the warships had first to undergo a severe examination of their power plants, tank installation, life-saving equipment, etc., before the licenses were granted. All useless equipment was condemned and had to be replaced, and when found satisfactory the number of passengers that each boat was permitted to carry was determined and had to be displayed on a metal sign somewhere above deck.

The condemned equipment.

Along the Jersey Coast.

A Resumé of the Great Things Accomplished by the South Jersey and the Delaware River Yacht Racing Associations.

By E. H. Rosenburger.

ORGANIZED racing has done wonders to promote the sport in South Jersey waters, having had the effect to bring motor boat racing to a higher level of efficiency, and to a loftier plane in the way of true sportsmanship. Credit for the remarkable season and for the advancement of the sport is due to the untiring efforts of the South Jersey Yacht Racing Association, composed of representatives of all the yachting and motor boat clubs along the coast resorts. This association closed its season early in September, after having held one open regatta on each of the club courses, which provided one or more grand events during each week of the season, and in which were entered the more active boats of the various classes.

Probably two hundred boats took part in these events during the season, and at least one hundred of these were boats which were active in racing circles to a greater or lesser degree, either in the open regattas, or in the races held from week to week by the several clubs as home events. Of these the cup winners number nearly a half hundred or more, but by the time they are reduced to the consistent winners in the grand events, they may be grouped into a half-dozen or more for the several classes of boats, showing which affords interesting study; and which augurs much for the promotion of the racing game under organized conditions.

The performance of the hydroplanes was always the spectacular feature of the organization regattas, and in this the South Jersey Association as the field of production for real fast company holds an enviable record. Among them can be numbered the Tech, Jr., the Chelsea Special, the Elmaja II, and others, each of which have its distinctive features. The Tech, Jr. has a national reputation as a fast boat. The Chelsea Special, not quite so speedy, enjoys the distinction of having finished in every race she entered during the season, proving the reliability of the boat and the ability of her crew to navigate, features which are important in the racing game. The Elmaja II, the handsomest boat of the three, being a mahogany boat of high polish, enjoys the distinction of being the fastest hydroplane able to come up to the slip after the race and take her party of ten or even twelve passengers, and go to any part of the South Jersey coast, even going outside with reasonable safety, being a consistent racing boat, and yet the speediest runabout afloat.

Among the cruiser type of boats the South Jersey fleet has made wonderful progress in the last twelve months, and the season has not been without its lesson which bespeaks for the 1913 season still greater progress, placing the fleet far in advance numerically, beauty, safety and speed. The fleet includes every type, though the greater number of the new boats are designed to combine speed with

comfort, as well as all the other attributes to the sport afloat the roomy cabin cruiser. This is true of the little raised deck type cruiser, as well as the larger craft which borders on being palatial.

Among the new boats which, during the season, won the admiration of yachting folks are such boats as the Luegeo II, owned by Captain Fish, of Ocean City; the Mirna, Joseph Snellenberg, of Ocean City; the Casino, William Erb, of Sea Isle City, and a number of other boats of the same type. Among the new ones are several which are claimed to have the object in mind of "beating the rules," when being designed. In this the Delaware River Yacht Racing Association has gone the South Jersey Yacht Racing Association one better in the framing of its racing rules for the season. The South Jersey Yacht Racing Association rules are those of the American Power Boat Association. The Delaware River Yacht Racing Association incorporated in its rules (which are those of the American Power Boating Association with this exception) a clause reading, "It must have a water-line breadth of not less than one-fifth of the load water-line length," in its definition of what is a cruiser. The most successful boats were those which did consistent work, and which

(*Continued on page 74*)

The motor barge with her clean-cut, business-like lines and arrangement.

The Navy's New Motor Barge.

A Trim Departure from the Old Time Steam Launch as an Auxiliary to the Battle Ship.

A NEW style of barge for admirals and other general officers has been introduced in the United States Navy recently, in the shape of a motor yacht, built at the Herreshoff Yacht Yards at Bristol, R. I. Upon plans drafted by Designer Nathaniel G. Herreshoff, from suggestions of outlines furnished by Rear Admiral Cameron McRae Winslow, the commander of one of the divisions of the Atlantic Battleship fleet of the Navy, for whose use the craft was built.

High sided and with a clean run, the barge was launched in Bristol, R. I., on September 3rd, while Admiral Winslow was with the fleet on the practice grounds in southern latitudes. Subsequently the craft had her builder's trial spin, then on September 11th her official tests, and proved to have speed to spare as judged by the contract speed which was 15 miles an hour. The boat, when put to the test with her two 60 h.p. Sterling engines, keyed to their fullest capacity, moved at the rate of 17 knots or a little better than 19.5 statute miles an hour over the measured Herreshoff course in Narragansett Bay.

The speed of the boat is not apparent when one sees her in action, for she cuts through the water so smoothly as to make it deceptive as to the rate she is traveling at. Admiral Winslow's barge, which is destined to be used by him in the usual inspections and duties requires of one of his rank, is 60 ft. in length by 10 ft. beam, with an actual weight of the craft of only 7½ tons with everything on board.

Ready for service at any time the new barge is painted with a battleship gray, which is in striking contrast to the more elaborate finish of her upper works which are done in the natural butternut.

Those who witnessed the barge's trials marveled at the difference in model and outline of the new Herreshoff creation and the blunt-entered steam barges now in use among the ships of the battleship fleet. The boat is a graceful-looking craft devoid of all ornaments on the outside, everything appearing above deck being for use. One new wrinkle introduced in the model by the designer is the formation of a hand rail along the sides serving also as a speaking tube from the cockpit to the engine room.

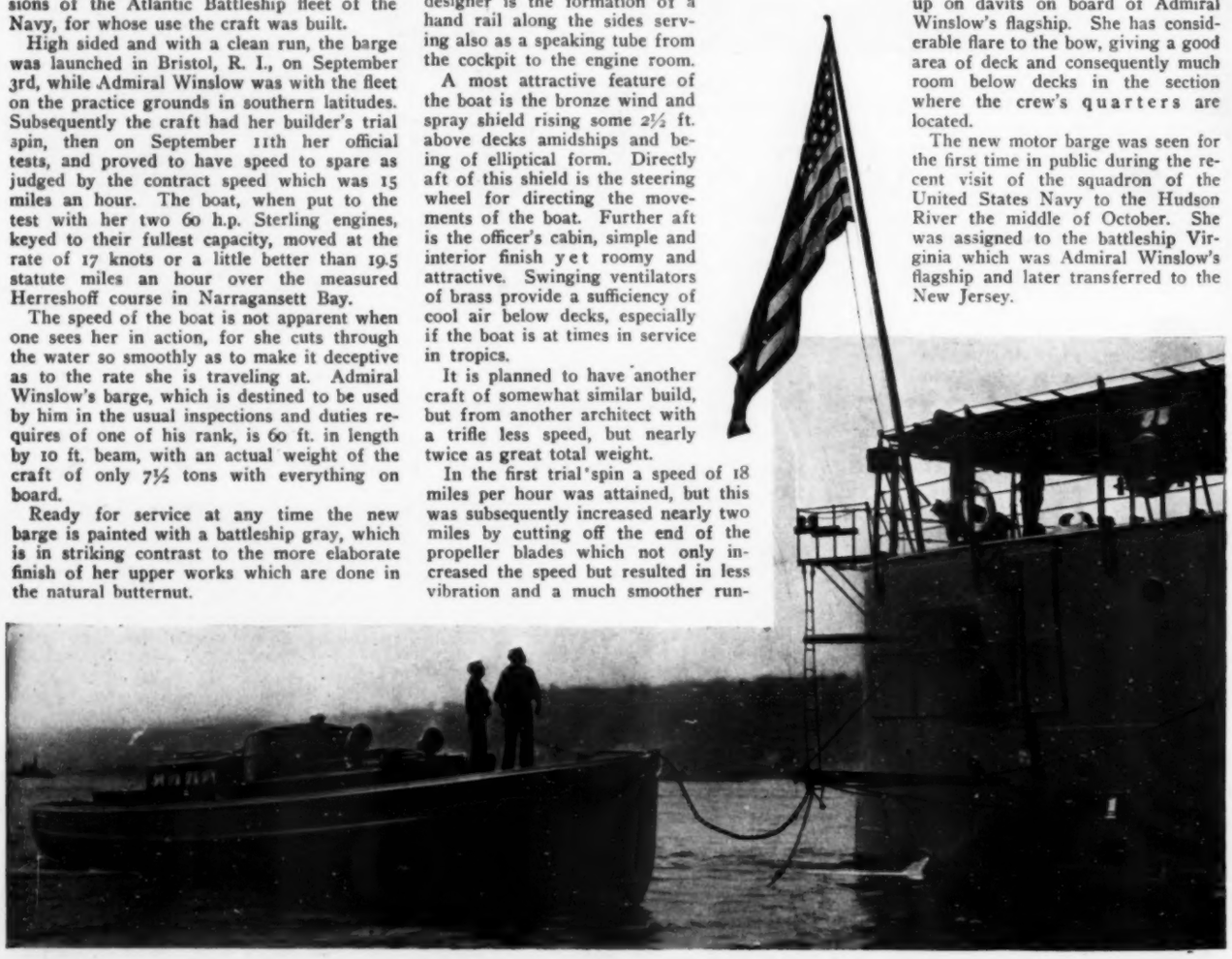
A most attractive feature of the boat is the bronze wind and spray shield rising some 2½ ft. above decks amidships and being of elliptical form. Directly aft of this shield is the steering wheel for directing the movements of the boat. Further aft is the officer's cabin, simple and interior finish yet roomy and attractive. Swinging ventilators of brass provide a sufficiency of cool air below decks, especially if the boat is at times in service in tropics.

It is planned to have another craft of somewhat similar build, but from another architect with a trifle less speed, but nearly twice as great total weight.

In the first trial spin a speed of 18 miles per hour was attained, but this was subsequently increased nearly two miles by cutting off the end of the propeller blades which not only increased the speed but resulted in less vibration and a much smoother running power plant.

This boat is the only one of its style at present in the United States Navy and its advent was hailed with so much expression of delight that many expect that the type will be a permanent one. The stern, elliptical in shape, is quite full. She is double-planked, has three watertight compartments and was designed so as to be able to be taken up on davits on board of Admiral Winslow's flagship. She has considerable flare to the bow, giving a good area of deck and consequently much room below decks in the section where the crew's quarters are located.

The new motor barge was seen for the first time in public during the recent visit of the squadron of the United States Navy to the Hudson River the middle of October. She was assigned to the battleship Virginia which was Admiral Winslow's flagship and later transferred to the New Jersey.



The new barge at the boat boom of a dreadnaught.

New Things for Motor Boatmen

A Useful Refrigerating Machine.

The H. W. Johns-Manville Co., of New York City, are handling a refrigerating machine that will prove useful upon yachts of liberal dimensions which are used for extended cruising, as the ice bill can be very materially reduced through its installation. The refrigerating mechanism can be used in connection with any refrigerator and is known as the Audriffren-Singrun refrigerating machine. It is entirely automatic and is operated by a small motor. It chills brine, which passes into the refrigerator as a cooling agent, chilling the air and making, when desired, absolutely pure ice for table use. The motor is operated from the ordinary electric light circuit or by water power or a gasoline motor and under average conditions will give more efficient cooling than 100 pounds of ice, at a total cost of from 16 to 22 cents. No experience is necessary to operate the machine and where electricity is available the operation is controlled by the mere turning of a switch.

* * *

Electrine Fire Gun.

This is a fire extinguishing apparatus manufactured by the Electrine Company, Whitehall Building, New York City, and it is particularly useful in extinguishing gasoline or oil fires since it throws a strong, steady and continuous spray which will reach places ordinarily out of reach by any other means. But one hand is required to operate the device and the fluid used will not injure any kind of fabric. The gun itself is constructed of brass, the one-quart size weighing 7 pounds, and no pumping is required except for refilling. To operate, it is only necessary to turn the nozzle and direct the stream at the base of the fire, so that one hand can be left free to remove obstacles or to operate another extinguisher. Style A, for garages or boat houses, sells for $8 in the one-quart size and for $10 in the 1½-quart size. A smaller size, known as Style X, is a trifle lighter, being intended particularly for use aboard boats.

* * *

The Sword Piston Ring Remover.

A useful device for removing piston rings has recently been invented and is being manufactured by the Sword Manufacturing Company, Inc., New London, Conn. This piston ring remover is designed to handle the rings without breakage and to keep them in shape while handling, at the same time operating very rapidly and without inconvenience upon the part of the operator. The method of removing employs a very simple operation and as the ends are so made that they will take any shape split on a ring the clamping of the handle does the work. The instrument is operated by a simple pressure of the hand and sells for 75c per pair.

* * *

Fahnestock Battery Switch.

Two new types of battery switch have been brought out by the Fahnestock Electric Company, 129 Patchen Avenue, Brooklyn, New York City, both of which are illustrated upon this page. The type known as No. 1 is a single circuit switch and sells for 20c and the type known as No. 2, which is a two-circuit switch for battery and magneto, sells for 30c. These switches are very efficient and reliable, the base being of hard black fiber with spring-binding posts. There is no wiring inside of the switch and all parts are riveted together so they cannot work loose. Switches with different numbers of contacts are made up to order.

Operation of the Wink crank.

The automatic refrigerating machine.

The Electrine fire gun.

Showing the operation of Saunders gasoline saver.

The Fahnestock two-circuit switch.

The Fahnestock single-circuit switch.

The Wink Crank.

A safety crank operating upon a new and somewhat simpler principle is being introduced for the first time by its makers, the Wink Manufacturing Company, 2106 Superior Viaduct, Cleveland, Ohio, and from its method of operation it seems that the crank should prove a valuable accessory to the motor car, even should the car be provided with an automatic starter. It is usually necessary to carry a crank in case of emergency and as this is a folding type it can be carried very easily in the tool box or under the seat. In appearance this new device is similar to the ordinary type of crank except that the handle itself is pivoted and a small spring is added, so that in case of a back-fire the handle automatically folds back so that no injury is done to the operator. When the handle is folded back in this way the crank arm can spin without danger since the handle is in the same plane as the arm itself. There are no gears or cam levers added and the new crank can be added to the equipment of a car at a cost of a few cents upon the part of the manufacturer if incorporated at the time the crank is installed. At retail the crank will sell for $5.

* * *

Saunders Gasoline Saver.

A little brass cylinder that screws into the intake pipe and which sells for $5 is said to have worked wonders in the matter of saving gasoline and increasing the efficiency of the motor. On the inner end of this little cylinder is a taper plunger that opens and closes an air passage by the slight movement of a small lever which attaches to the steering post at the driver's finger tips. By this means many a motor which ordinarily uses large amounts of gasoline can be made to use more air and less fuel in many instances. The plunger of this gasoline saver is shaped so as to let the air into the intake gradually, so that the change in the mixture is never abrupt. For motors equipped with automatic starters the gasoline saver can be opened wide upon stopping the motor, thus filling the cylinders with pure air and eliminating all dead gases which are likely to interfere with the perfect combustion of an acetylene gas. If the motor is not equipped with an automatic starter the gasoline saver can be closed upon stopping the motor, so that the cylinders are filled with a rich explosive mixture ready for starting. The device is made of brass, or in nickel finish at an extra cost of 25c. The makers are the Leslie R. Saunders Co., 927 West Seventh Street, Los Angeles, Cal.

* * *

Superior Double Spark Plug.

This plug is made by the Superior Motor Specialty Company, 44 North Fourth Street, Philadelphia, and is provided with two independent electrodes, one for the magneto and the other for the battery, so that it can be used for making two sparks simultaneously in a single cylinder without any additional mechanical device. It can be used as a single or as a double plug without any changes whatever and there can be no leaks or loss of compression. The porcelains are made by an improved process and the sparking points are of an imported special wire electro-hardened and so made that the points are self-cleaning. This plug is made in the form of a T at the top, providing two terminals to which connection can be made so that two sparks can be had at the same time whenever desired. To use this as a single plug it is only necessary to disconnect one of the terminals or throw it out of the circuit by means of the switch. The most useful feature is the fact that the same plug can be used in switching from the battery to the magneto.

From Motor Boating Readers

A Department for the Exchange of Ideas and the Discussion of Questions of General Interest. Editorial Opinion on a Number of Questions Submitted by Readers of the Magazine.

MoToR BoatinG's columns are open to its readers, not only for asking questions, but for placing before other readers ideas, results of experience, opinions, etc., that should be interesting or helpful to them; but the editor will not, of course, be responsible for any opinions expressed or statements made in such communications. The name and address of the writer must necessarily be given in every case to make an answer by mail possible (no anonymous contributions will be considered for publication), but names will be omitted in publishing the letters and answers where desired, in which case it is desirable that initials or other distinguishing signature be appended. Through this department readers of the magazine may be of direct aid to one another in solving the problems of motor boating.

Flared Bow and Compromise Stern.

To the Editor of MoToR BoatinG, *Sir:*—

Please inform me whether a full flared bow is dangerous on a cruiser having a compromise or V stern? I saw a statement in a back number, in which a cruiser with full flared bow and broad transom stern was described as positively dangerous in a heavy sea. J. F. R., Philadelphia, Pa.

[The original statement you refer to was probably a little misleading, as we take it that it meant that a broad transom stern in connection with a fine bow would be dangerous in that the seas would easily raise the former and submerge the latter. Whoever made the original statement probably meant that the fine waterlines that usually accompany a heavy flare were detrimental rather than the flare itself which if the waterlines were full enough, would be an advantage on any type of cruiser.]

Crating Boat for Shipment.

To the Editor of MoToR BoatinG, *Sir:*—

I have a 21 ft. motor boat which I wish to ship and I am anxious to know how to crate such a boat for shipment. The boat is 5 ft. wide, and 24 inches high at stern, at bow 34 inches.

Do you think such a boat will go in a box car? H. B., Mt. Pleasant, Mich.

[We do not believe any extensive crating is necessary, simply two or three heavy chocks for the boat to rest on, to keep it in an upright position and prevent it from resting on its bilges during transit and with light battens carried up from these chocks, so it should be sufficient protection. Of course, the boat should be well covered with canvas or burlap before putting the battens on, to prevent any injury to its finish. The boat can either be sent in a box car or on a flat car, preferably the former and we think you will have no trouble whatsoever. Many boats are shipped from the factory this way, most of them with only the canvas covering for protection.]

Gearing Shaft to Engine.

To the Editor of MoToR BoatinG, *Sir:*—

Would you kindly inform me whether it is the custom, on racing hydroplanes, to gear up the speed of the engine, so as to obtain a larger number of r.p.m. at the propeller than at the engine. Would I obtain any more speed from a 45 h.p. engine if it were geared up in the manner described? I do not own a boat at present but contemplate building one.

A. B. T., Boston, Mass.

[The practice of having the propeller revolve at twice the engine speed is in use today in many of the hydroplanes. However, we do not believe that this number exceeds those that have their shaft turn at the same speed, it being our belief that the two types are about evenly divided. We know of installations where the engine turns as high as 1500 revolutions per minute that the shaft is geared up in a ratio of 2 to 1, and again we know of almost similar installations of a like speed where the ratio is unity. We are not able to state whether you will obtain any more speed from your outfit, as you have not given us data enough to allow us to decide.]

Two and Three Port Engines.

To the Editor of MoToR BoatinG, *Sir:*—

Will you be kind enough to explain in your valuable columns the difference in principle and design of the two and three port type of engines?

A. R. K., Boston, Mass.

[Except in the method of admitting the gases the two types are practically the same. In the two port type the vapor is admitted into the crank base through the check valve (A Fig. 1.), the latter being forced open by the partial vacuum created by the upward motion of the piston B. The gases cannot pass through the passage C to the upper portion of the cylinder until the port D is opened. This does not occur until the piston has nearly reached the bottom of the downward stroke

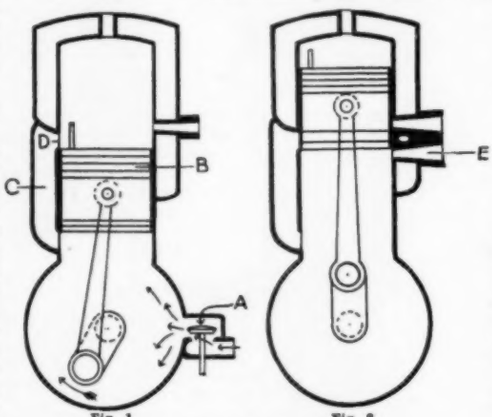


Fig. 1 Fig. 2

Diagrams of two-cycle motors of the two and three port types.

at which time the gases in the bases are under slight compression.

In the three port type, instead of admitting the gas through a check valve there is an additional port provided (E Fig. 2.), this being covered except when the piston is near the top of its stroke and when a partial vacuum has been created below the piston. This causes the vapor to be admitted quite suddenly in much less time than in the two port type which is more pronounced in the high speed type of engines where the action of the check valve is uncertain. As the third port is covered except during this short period no check valve is necessary. The three port engines are better adapted to high speeds than low and for this reason many of the light high speed engines are of the three port type. Some three port engines use check valves in addition to the extra port and some designers claim additional advantages from the use of both.]

Automobile Engine in Boat.

To the Editor of MoToR BoatinG, *Sir:*—

I want to build a boat of approximately 20 ft. long, if I can use an automobile engine in it. I have the opportunity of securing one of several engines ranging from a single cylinder up to a four cylinder. Will you kindly advise if automobile engines can be successfully used in boats and if there is any limitation to their use, what types of boats are they suited to, if any. I had in mind the building of a V-bottom boat. Would an automobile engine suit it? J. F. B., Savannah, Ga.

[In your 20-foot V-bottom we would advise you to go very slowly in equipping any boat whatsoever with an automobile engine. The conditions are altogether different in marine practice than on land and although we have known of some boats to be a success with automobile engines, yet the number that have been failures are decidedly in the majority. If you choose an automobile engine, do not take one of the lightest and highest speed ones possible and do not put it in any boat except one of the very lightest construction.

An engine working in a boat may be compared to an automobile going up the steepest grade at full speed all the time, which I think you will see, is a condition which no automobile engine is designed to meet.]

Back Firing at Speed.

To the Editor of MoToR BoatinG, *Sir:*—

May I trouble you for a little advice? I have trouble with my two-cycle four-horsepower engine using a carbureter. The engine will run very regularly at about three-quarter speed, but in attempting to speed up the service becomes poor, the engine back firing (base explosion) slows down almost to a stop, fires a few times and then stalls. If you could give me any advice as to what to do in order to run at full speed, I would be greatly indebted to you for same.

J. E. G., New York City.

[The trouble is from one of two sources; either you have not the needle valve open far enough for the engine to get the correct mixture at speed, or else your feed pipes are clogged tending to reduce the gasoline supply at the time when the greatest amount is required. The most general cause of base explosions is too weak a mixture and the easiest way to overcome this is to supply a trifle more fuel. You will probably see that at other speeds you will have to cut down on the supply or make an adjustment of the needle valve when considerable variation in speed is desired.]

How It Worked.

To the Editor of MoToR BoatinG, *Sir:*—

I have your letter and in reply I beg to advise you that I have followed the suggestions contained in the above letter with the most gratifying results. I made the adjustment you speak of and can now run the engine at any speed without any trouble.

J. E. G., New York City.

Wheel for a Steel Boat.

To the Editor of MoToR BoatinG, *Sir:*—

Would you please answer the following questions for me. I have a 16-foot Mullins steel boat, weight about 500 pounds. It is powered with a 3 h.p. 3 port motor, 2 cycle; 3½ in. bore by 3 in. stroke, developing its rated h.p. at 900 revolutions. What propeller would be most suitable for the above and what speed could I expect from it and whether 2 or 3 blade is the most desirable? I can just swing a 12 in. diameter wheel with about ¼ in. clearance under hull.

W. C., Philadelphia, Pa.

[While you did not give us the beam of the boat yet assuming that it is about 4½ feet, which is an average figure we believe for this type of boat, we would advise for the maximum speed a two-bladed wheel of 11 inches diameter and 12 inch pitch. This should give you a speed of 7 miles per hour. A three-bladed wheel 10 in. x 12 in. would give you a much smoother running propeller than the two-bladed one but probably you would have to sacrifice a trifle in speed.]

Other Requirements Besides Proper Wheel Necessary.

To the Editor of MoToR BoatinG, *Sir:*—

I am building a motor boat 35 ft. long, 6 ft. beam with a model bow and fan tail stern with a 45 h.p. engine making 1500 r.p.m. Would like you to advise me what size three-blade propeller and what pitch and type to drive this boat 25 miles per hour.

J. E. C. Guild, Tenn.

[We do not believe any wheel whatsoever with this power plant and especially this type of stern would make it possible for you to go at the above speed. In fact we are very doubtful you could get over 15 miles an hour, and for 25 miles an hour you will at least need 100 h.p. and probably more.]

More Speed Wanted.

To the Editor of MoToR BoatinG, *Sir:*—

As a subscriber to your magazine, I would like to have your advice as to the propeller for my boat. She is of the Hand V-bottom type, 18 ft. long by 4½ ft. beam, with easy lines. The engine is a four cycle, four cylinder motor, with 3½ in. bore and 4 in. stroke and supposed to develop 10 to 12 h.p. at 800 to 1000 r.p.m., weight of engine 350 lbs. I am at present using a wheel with three blades, 16 in. diameter and 18 in. pitch and get about 11½ miles an hour. There is another outfit on the lake exactly like mine, except that the boat is 2 feet longer and he is getting 15 miles an hour, turning a smaller propeller at 1200 revolutions per minute.

F. M. D., Palm Beach, Fla.

[We would advise one of three blades 12 inches in diameter by 16 inches pitch, which we think you should be able to turn up to the necessary number of revolutions, although we doubt very much if you will be able to obtain quite 15 miles an hour, as this seems to be a rather high figure for only a 10 horsepower engine in a boat of your size.]

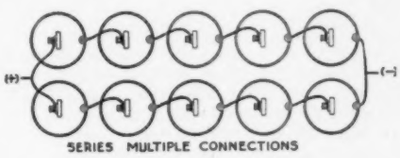
Surface Propellers for Monoplane.

To the Editor of MoToR BoatinG, *Sir:*—

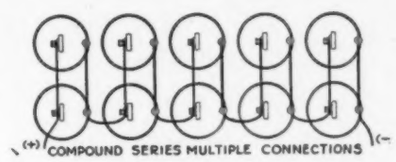
Would it be practicable to equip an 18-foot boat, built on the lines of the 20-foot monoplane described in your January number of MoToR BoatinG, with surface propellers? If so, what power engine and what size propellers would you advise and about what speed could be expected from such an arrangement? Thanking you kindly for this information, I am,

H. H. Y., Valley Junction, Ia.

[Such an installation is perfectly practicable and should give excellent results if properly done. The propellers should be only a trifle larger in diameter and about the same pitch as the ordinary wheel with which you would equip your boat but the width of the blades should be from 1½ to 2 times the width of the regular propeller. The engine must be located as far aft as possible and the shaft should come through the transom just above the bottom planking. It is hard to advise on the actual speed that you will be able to obtain, but we believe it should not be far different than if the boat was equipped in the regular way.]



SERIES MULTIPLE CONNECTIONS



COMPOUND SERIES MULTIPLE CONNECTIONS

Grouping of Cells.

To the Editor of MoToR BoatinG, *Sir:*

Will you please let me know in your November issue what would be the voltage and also the amperage of a battery of 10 dry cells connected in compound series multiple, each cell having 1½ volts and 25 amperes. How does this compare with the same cells connected in series multiple?

S. W. C., Dedham, Mass.

[The voltage and amperage would be practically the same, namely 7.5 volts and 50 amperes, whether the so called series-multiple or the compound series multiple arrangement of connecting the 10 cells is used, provided that all the cells were of the same voltage and internal resistance. However in the former manner of connecting the group, should one of the cells be low in voltage or one group of five be lower than the other group of five or one group contain an imperfect cell, the higher group would have a tendency to discharge itself through the lower group, as a closed circuit exists when there is any difference of potential between the two groups. This also holds true if any of the cells for any reason deteriorate faster than the others. Likewise should a short circuit occur in or at any one of the cells, then the group of five good cells would discharge itself down to the voltage of the group containing only four good cells which would be very detrimental to the battery.

In the compound series multiple grouping, should any of the above troubles occur, it would affect only the one cell connected in parallel with the affected one and not the whole group or perhaps the whole battery by discharging only one other cell instead of five. On the other hand, should an "open" occur or one of the cross connecting wires become disconnected from its terminal, the engine would necessarily stop as the entire circuit would be open, while should such occur in the series multiple grouping, one group of five would continue to supply current and there would be no positive indication of any trouble which might not be detected for a long time.]

Proper Wheel for Knockabout.

To the Editor of MoToR BoatinG, *Sir:*—

In your February issue, 1912, on page 12, 13, 14 you tell how to make a 20 foot knockabout boat. I am building this boat, as near to your plans as possible. I have a 20 h.p. Beaver opposed, 2 cylinder engine. Tell me size of wheel to use and would also like to know if 1 inch shaft will be strong enough. I want speed, all I can get. What speed do you think I can secure?

O. D. McK., Salineville, O.

[With a 16 in. x 24 in. three-bladed propeller turning at 1000 r.p.m. you should obtain about 15 knots. Although you did not give us the speed which you intend to run the engine, we have assumed the above speed believing that it is about the speed at which the Beaver engine is designed to run. The one-inch steel or bronze shaft should be strong enough for your requirements.]

More Speed with Greater R. P. M.

To the Editor of MoToR BoatinG, *Sir:*—

I would thank you to answer the following questions to the best of your judgment. I have a V-bottom boat, water line, 23 ft. x 6 beam, stem is almost flat. I have at present installed in same a single cylinder engine turning a 18 in. wheel 25 in. pitch, 550 r.p.m. and am making 7½ miles an hour. I would thank you to tell me what speed or additional speed I may expect to obtain from same boat with an 18 in. wheel, 26 in. pitch turning 700 r.p.m.

A. M. B. C., Alexandria, Va.

[We believe that with an 18 in. x 26 in. wheel turning at 700 r.p.m. and assuming the same slip which you now get, you should obtain between 9½ and 10 miles per hour. Of course, you realize you did not give us the horsepower of your engine and it may be that the same engine would not be able to turn an 18 in. x 26 in. wheel 150 revolutions faster than you get at present.]

A Racing Problem.

To the Editor of MoToR BoatinG, *Sir:*—

Will you please be good enough to answer the following questions. Here we have some boat racing and the rules say there shall be three races and the boat making the highest number of points wins. In the first race A wins and C is third. B doesn't run at all. In the second race A, B and C run a tie and in the third race again A, B and C run a tie. Which boat has the highest number of points? The points count as follows: 10 for a win, 7½ for second and 5 for third. In the first race another party run second but afterwards failed to score. I am a constant reader of MoToR BoatinG.

M. H., Peace Dale, R. I.

[It is almost impossible to render a decision in your race question as the rules for scoring should have taken account of just such a case. As these differ so widely, it might be that our decision would be just contrary to your rules. However, we believe as "A" has once shown her ability to win and none of the other boats have ever beaten her, she should be awarded first prize. On the same basis "C" should win second prize and "B" third. The same order would also hold had your rules provided that the total points (22½) should be equally divided between 1st, 2nd and 3rd in case of a tie.

The rules for scoring in vogue in some races provide that each boat shall receive one point for finishing and one point for each boat that she defeats whether the latter boat finishes or not. Where the races are in the form of a series or heats the greatest number of boats starting in any one of the series is used in figuring the number of points to be awarded in each one of the heats, consequently a boat not starting in a heat receives no points yet the other boats finishing receive a point fo. defeating her, just as though she had started and been beaten. On this basis "A" would also win first and "C" second place.

Accurate Speed Timing.

(*Continued from page 9.*)

the crews. The timers at each end are not in direct communication and generally only a small fraction of the course is visible from their respective positions. Should one of the trial boats meet with trouble after a start, and decide to make a new attempt, before finishing the original mile, this fact would only be known to them themselves and their return for a new start would probably be recorded as a finish by one set of timers who would also get the time of the next start, but the timers at the other end in the meantime would get no observation until the finish of the new lap which would result in almost endless amount of confusion when comparing the records. Again the boats are very apt to do considerable running about over part of the course before they start their actual trials and the timers have no way of finding out whether these are real ones or not. Worst of all, there is no check on the timers' records and if there are only two at each end it is the easiest thing in the world to make an error in recording of a minute or more without detection, and this is even more amplified, should the watches not be in exact synchronism. This fact was all too well illustrated in one of the most important speed trials this year when a prize worth hundreds of dollars was at stake.

It is very important that for the greatest efficiency the timers at each end should be in direct communication during the trials. There are a countless number of things that each should keep the other posted on at all times and the danger resulting from not knowing the elapsed times until the trials are all completed is overcome if the timers are able to talk to each other. This is very readily done by establishing a telephone line between stations.

The diagram clearly shows the connections. As the distance is not great a small gauge iron wire can be used, and, in fact, if the line is not parallel to some high tension line to make it noisy, a grounded return line will prove very satisfactory. In this case it will be necessary to string only one wire, F, connecting F' to the ground at C and D instead of running it overhead between the two stations. A modification of the plan which would provide a simple circuit would be to use the ordinary direct current bells instead of the standard telephone magneto and ringers and also to rely upon simply a receiver at each end instead of more or less delicate transmitter. This would do away with the induction coil entirely and the telephone receiver hook whose wiring is somewhat complex to the amateur at its best. However, the results that would be obtained with this arrangement while probably satisfactory, would hardly give the satisfaction that the arrangement shown in the diagram is bound to and one is sure to be amply repaid for the little extra trouble and expense that he would necessarily have to go to in order to install the complete system.

G and G' are ringing magnetos for calling the timers to the telephone when those at the opposite end are not on the line, by sounding bells H and H'. The telephone hand receivers I and I' are connected as shown and bridged to these are the head receivers J and J'. This is a double precaution so that at least one timer will be able to hear what is said into the transmitters K or K'. L and L' are ordinary telephone induction coils connected as shown and M and M' are three-cell batteries at each end to supply the necessary talking current to the transmitters. N and N' are the well-known hooks where the receiver is hung when the line is not in use and which automatically open the battery circuit.

The modus operandi is too simple to require much explanation. The timer at each end with the head receiver is stationed at the transmitter and the hand receiver is given to one of the other timers, thus putting the four into direct communication. Those at the starting end keep the others informed of the preparations that the boat which is to make the first trial is making for her start and as she approaches the line, the man at the transmitter says, "Get ready," which is a signal for all timers to be ready to start their watches a few seconds hence which is done at the time the boat crosses the line and the word "Go" is spoken into the transmitter. This enables all four watches to be started simultaneously.

As the boat draws toward the finish line the timer at the other end informs the three others to get ready for the finish, and as the craft dashes past the wires, he simply says "Stop" and all four watches are again stopped together. The times of the four watches, which have been previously numbered, are taken down by a clerk at one end, being repeated over the wire. Any error is immediately apparent and can generally be rectified in an instant by the four on the line before the start of the return run. This is handled in the same way except, of course, that those

(*Continued on page 76*)

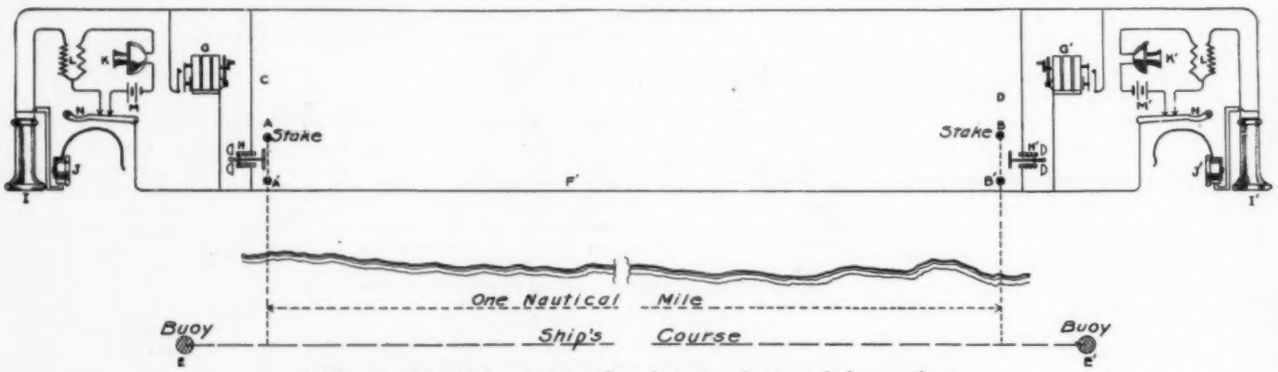


Diagram of telephone connections between the two timing stations.

Mile Speed Trials. National Carnival September 21, 1912.

Time in Minutes, Seconds and Fifths.

1. Trials of Humpty Dumpty.

Watch No.	Run No. 1 Up Stream.	Run No. 2. Down Stream.	Run No. 3. Up Stream.	Run No. 4. Down Stream.	Run No. 5. Up Stream.	Run No. 6. Down Stream.	Avg. Spd. Comp. from Avg. Time.
1	2-14·4	2-01·3*	2-19·3	2-06·1	2-24·0	2-04·3*	
2	2-15·4	2-05·0	2-20·0	2-06·3	2-23·3	2-15·3	
3	2-15·3	2-05·0	2-19·3	2-06·2	2-23·3	2-15·0	
4	2-14·4	2-05·0	2-30·1	2-06·3	2-24·0	2-15·2	
5	.....	.....	.....	.....	.....	.....	
6	.....	.....	.....	2-07·4	2-23·1	2-16·0	
7	.....	.....	.....	2-07·2	2-23·1	2-15·4	
Average Time.	2-15·1	2-05·0	2-19·4	2-06·4	2-23·3	2-15·3	**28.4**
Nautical Miles per Hr. per Run.	26.6	28.8	25.8	28.4	25.1	26.5	
	26.6	27.7					
	28.8	27.30	27.50	27.35			
	25.8	27.10	27.20	27.09	27.22		**27.02** mean of means
	28.4	26.75	26.93	26.60	26.83		
	25.1	25.80	26.28				
	26.5						

26.86 = Average of speeds for 6 runs.

2. Trials of Debutante.

Watch No.	Run No. 1. Up Stream.	Run No. 2. Down Stream.	Run No. 3. Up Stream.	Run No. 4. Down Stream.	Run No. 5. Up Stream.	Run No. 6. Down Stream.	Avg. Spd. Comp. from Avg. Time.
1	2-34·0	2-23·2	2-30·2	2-18·2	2-26·2	2-25·1	
2	2-34·0	2-24·2	2-31·1	2-18·3	2-26·3	2-26·3	
3	2-34·0	2-22·2	2-31·1	2-18·1	2-26·2	2-18·3*	
4	2-34·0	2-24·2	2-31·1	2-18·3	2-26·2	2-26·3	
5	.....	.....	.....	.....	.....	.....	
6	2-33·0	2-24·3	2-30·3	2-19·0	2-26·0	2-26·3	
7	2-33·0	2-24·4	2-30·1	2-19·2	2-26·0	2-26·3	
Average Time.	2-33·3	2-24·0	2-30·4	2-18·3	2-26·2	2-26·3	**24.55**
Nautical Miles per Hr. per Run.	23.4	25.0	23.9	26.0	24.6	24.5	
	23.4	24.2					
	25.0	24.45	24.325	24.513			
	23.9	24.95	24.70	24.912	24.713		**26.84** mean of means
	26.0	25.3	25.125	25.025	24.968		
	24.6	24.55	24.925				
	24.5						

24.87 = Average of speeds for 6 runs.

3. Trials of Peter Pan V.

Run No. 1. Up Stream.	Run No. 2. Down Stream.	Run No. 3. Up Stream.	Run No. 4. Down Stream.	Run No. 5. Up Stream.	Run No. 6. Down Stream.	Avg. Spd. Comp. from Avg. Time.
.....	1-41·1	1-36·1	1-42·3	1-36·3	1-42·0	
1-36·2	1-41·3	1-36·3	1-42·3	1-37·1	1-42·3	
1-36·2	1-37·4*	1-36·0	1-42·0	.....*	1-41·4	
1-37·0	1-42·0	1-37·2	1-43·2	1-38·0*	1-43·0	
1-37·2	1-41·0	1-36·4	1-43·0	.....*	1-42·0	
1-35·4	1-37·3*	1-35·4	1-43·4	1-36·0	1-43·4	
1-36·2	1-42·3	1-35·1	1-43·0	1-36·3	1-42·3	
1-36·3	1-41·3	1-36·2	1-42·2	1-36·4	1-42·3	**36.2**
37.2	35.5	37.4	35.2	37.2	35.1	
37.2	36.35					
35.5	36.45	36.40	36.388			
37.4	36.30	36.375	36.312	36.350	**36.31** mean of means	
35.2	36.20	36.25	36.213	36.262		
37.2	36.15	36.175				
35.1						

36.27 = Average of speeds for 6 runs.

* Watch stopped. Observation not included in averages.

The home of the Boston Yacht Club at Marblehead.

Cabin Cruisers Race at Albany.

So successful was the Labor Day race for cabin cruisers, which marked the opening of the Albany Yacht Club's new headquarters, that it was unanimously decided that another race of similar nature should be run and accordingly the club held what was, if possible, an even more successful event on October 3rd. Six boats; The Lark, Widgeon II, Spindrift, Louise, Casino and Buster M lined up for the 21-mile course and with the starter's gun it was seen that thus early the race would not be uneventful as Buster M promptly started in the wrong direction, losing about five minutes. The others left with an exceptionally close start and remained bunched while in sight of the spectators; in fact, a boat's length or so was all that separated the three leaders at the end of eight miles. The Lark rounded the turn, which was situated at Mull's lower light ten and a half miles below Albany, first, followed by Spindrift and Widgeon in the order named, Buster M bringing up the rear. About half a mile below the Greenbush bridge the three leading boats appeared to the spectators to be about even, but it very soon became apparent that The Lark was leading, Widgeon second, and Spindrift third. They finished in that order, Spindrift saving her time was awarded the handicap prize. The race was a real sporting one right through, only 39 seconds separating the winner, The Lark, from the third. Casino did not finish.

Beaumaris Have Good Season.

The Beaumaris Yacht Club, Beaumaris, Ontario, Canada, has just concluded one of its most successful seasons, a number of cruisers and speed boats being added to the fleet, a fact which was made doubly apparent by the imposing and beautiful array at the annual regatta. Plans for next year's water carnival are already under way, and the commodore, Hon. Francis Burke; Vice-Commodore Colonel Andrew B. Berger, and Rear Commodore Thomas Hilliard are confident that last season's event, although a great success, will be completely eclipsed by the 1913 gala.

Racing at Fort Hamilton.

A race for the championship of the season was held by the Fort Hamilton Motor Boat Club on October 6th, five boats starting on a course of twelve nautical miles from the committee boat anchored off Fort Hamilton around the Romer Shoal Beacon, returning to the start. Grace, a 21-foot cabin launch with 10-h.p. motor, proved to be the winner; Garfoo, a 31-foot boat with 12-h.p. engine, second; the 22-foot, 15-h.p. launch Gu Gu taking third place.

East Greenwich Club's Innovation.

The East Greenwich Yacht Club held the last race of the series for the Commodore's Cup on September 28th. The trophy in question was presented by Commodore Fred H. Smith and was offered for cruising power boats belonging to the club, the winner of the greatest number of points for the series gaining the prize, the winner turning up in Beatrice, owned by Samuel Bailey, of Newport, R. I.

These races were run in the following manner: All boats were to cross the line at gunfire and run over a given course until the firing of a bomb, when they were to retrace the course, the first boat crossing the line to be the winner and to score 100 points. Checking boats were stationed at the southern turning and also at the eastern buoy to deal with possible protests, the boats were allowed 15 seconds to cross the starting line and were handicapped for any additional time.

President Criqui, of the Sterling Engine Company, and Commodore W. J. Gunnell, of the Motor Boat Club of Buffalo.

None of the competitors had any idea as to when the return signal would be given; in fact, the committee did not decide until after the start; in the face of this it is remarkable that five of the boats finished so close together that it was almost impossible to time them separately and accurately. The following boats entered in the series and finished in their relative positions: Beatrice, Idano, Viati III, Lavet, Leta, Nannie L, Raymar II, Shirley, Stag, Ruth W, Spindrift, Constance, Yankee, Leona, Iola D, Penelope, and Sea Rover.

North Hudson Club's Carnival.

The annual autumn carnival of the North Hudson Yacht Club proved a very successful function, opening with a power boat run to Spuyten Duyvel and return to the good things provided for members and their friends at the club house. A good deal of amusement was caused by the first item on the program, a "stern" race which proved not only stern, but serious to some of the skippers in their efforts to steer backwards from the club float. Commodore Doell and Vice-Commodore E. W. Keller are to be congratulated on a most successful carnival, they are already arranging to eclipse their 1912 program with even greater attractions next season.

The Bayside Logbook.

On September 30th, at Sundown, the gun was fired and the burgee lowered, putting the Bayside Yacht Club officially out of commission for 1912. The doors, however, will not close as each year there are many members who on fine days congregate as in the summer months. The duties of the entertainment committee also continue, a successful Barn Dance having been held in October, with other attractive functions to follow. From a sporting point of view the club has had a most successful season, which it is confident of not only maintaining, but excelling next year.

The Carondelet Club Races.

This year the popular St. Louis Club held its racing on September 29th and 30th. The committee, after working hard for some months, thereby securing a large and representative entry list, including some of the fastest boats in the country, were, however, disappointed to find on the morning of the racing that not a single visiting boat had arrived, and obviously if the regatta was to be held they would have to depend on local talent alone. Fortunately the local boats proved equal to the emergency and furnished plenty of excitement and close finishes, showing all

Rex Beach in his speed boat "Going Some" on Lake Hopatcong.

Photographs by Hall.

Santa Claus, winner of the cruiser class.

Start of the free for all class, at the Carondelet Club Races, held on the Mississippi River at St. Louis on September 29th and 30th.

Wild Cat, winner of the free for all class.

present that St. Louis had enough speed craft of her own to stage an excellent regatta. In one respect at any rate this year's regatta was a noteworthy one, owing to the first appearance of Wild Cat, the fast twenty-footer which was built specially for the Davenport and Chicago regattas, and which for want of suitable power was unable to get into the water until this late date. She is a hydroplane designed and owned by W. D. Beauvis, the well-known St. Louis speed boat builder, and while not showing any very wonderful time in the actual racing, yet in different spurts she developed pace equal to any twenty-footer seen in the West this year. She had no trouble in sweeping the platter clean, and much may be expected from her next season. Norma, owned by Dr. C. M. Starkloff, was the most successful of the other boats, finishing second; whilst R. W. Dodson's Go-Cart took third place. Santa Claus, owned by Russell E. Gardner, won the cabin cruiser race, with A. Kron's Duro IV second.

Bensonhurst Club Contemplates Change.

George R. Le Sauvage, Commodore of Bensonhurst Yacht Club, has called a meeting at Westlawn, the handsome edifice formerly occupied by the National Yacht Club, in order to lay before the members a proposition to take over the clubhouse and grounds. If the Bensonhurst members decide to acquire the property extensive alterations and extensions will be undertaken.

Knickerbocker Yacht Club.

The Knickerbocker Yacht Club having stations at College Point and Port Washington, Long Island, went out of commission Saturday, October 19th. The event was celebrated by a Beef-steak dinner and smoker at the College Point house, which was attended by over 200 members and friends. This, which has been the club's thirty-eighth season, has been most successful in every respect. The racing events have been well filled and closely contested, and the hospitality of the Knickerbocker boys is known the sound over.

The Vikings.

The Vikings, the organization recently formed to promote amateur long distance racing and the development of a seaworthy type of small cruiser, adopted a constitution and by-laws at their last meeting at the New York Athletic Club. Mr. Jos. H. Wallace was elected Supreme Chief; E. W. Marshall, treasurer and C. F. Chapman, secretary.

Red Bank Motor Boat Club.

The Red Bank Motor Boat Club, which it will be remembered held the most successful regatta in the east on last July 4th, have decided to hold a three day event in 1913 on July 3rd, 4th and 5th. Tentative plans have already been drawn up and classes arranged for all classes of hydroplanes and displacement boats. The idea of announcing this event at this time is to prevent confliction in the dates of racing boat owners and if this be the case, we believe we will have the opportunity of seeing in the east an event that will equal the great ones that are pulled off each year in the west. The waters at Red Bank are the very best, resembling the Florida course in many particulars. It is entirely protected from any wind, and is clear of any driftwood besides being exceptionally good from a spectator's standpoint. Owners should now mark this date on their calender and plan to be present, for great things are sure to happen.

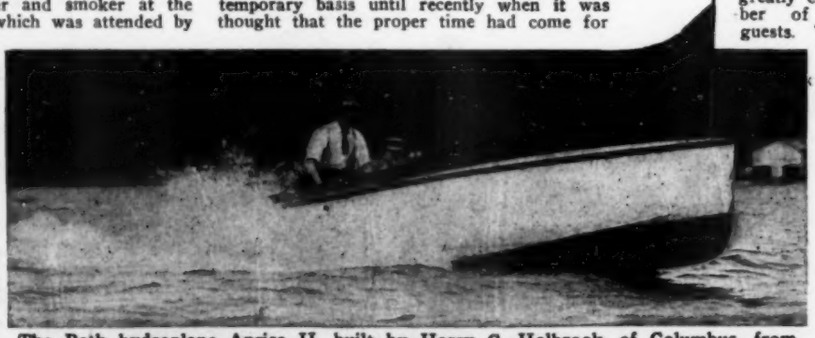
The members have been very active in other than racing lines also, having cleared about $400 at a fair held during the summer months. On October 18th a vaudeville show was given in the Red Bank Lyceum, which proved very profitable. The work that the members have had under way for some time of a re-organization has been perfected and a new set of by-laws adopted. The club being only about a year old necessarily was on a more or less temporary basis until recently when it was thought that the proper time had come for a permanent organization. One departure in this club's by-laws is the provision for a large number of fixed events, and if this be the case, the members are sure to be kept busy and interested in the club's welfare.

Motor Boat Club of Buffalo.

The Motor Boat Club of Buffalo's October issue of their monthly publication, The Log, is an exceptionally bright and cheerful number. A very full and comprehensive resume of their fall regatta is printed therein which is well illustrated with pictures of the owners of the races and their boats. Commodore Gunnell's editorial on the progress of this club is an inspiration that every club member should read.

Colonial Yacht Club.

The Colonial Yacht Club having quarters at 140th Street and Hudson River, New York City, went out of commission for the season the latter part of October. The racing season was ended September the 15th with the races to Rockland Light and return, which closed the most strenuous season the club has ever experienced. During the recent visit of the Atlantic fleet to the Hudson River, this club extended the courtesies of their home to the officers, which were taken advantage of by many of them who used the club float as a place for embarking their guests to the many social functions aboard the battleships. Admiral Winslow of the Virginia used the Colonial Club extensively during his stay in those waters, and his new motor barge attracted much attention. On October 13th the ladies of the club gave a Hallowe'en Barn Dance that was greatly enjoyed by a large number of members and their guests. The annual dinner will take place at Shanley's on November 23rd at which time the numerous trophies which have been won this season will be presented. These include the seven trophies presented by Senator C. C. Hunt for the 183 mile race, which was held on July 6th around Cornfield Reef Lightship and return, in which fourteen cruisers started, nine of which finished within the time limit.



The Bath hydroplane Aprisa II, built by Harry C. Holbrook, of Columbus, from knock-down frames.

YARD AND SHOP

William Gardner's New Arrangements.

William Gardner, Philip Leventhal and Frederick M. Hoyt have formed a co-partnership under the firm name of William Gardner & Co., Naval Architects, Engineers and Yacht Brokers. The address is 1 Broadway, New York, and the personnel of the designing and brokerage departments remains unchanged.

A Fine Performance.

William Newstead, who acted as engineer on the memorable transatlantic trip of the Detroit, writes the Detroit Lubricator Company as follows: "You will be pleased to learn of the excellent service given by the Detroit force feed oiler—although it was a regular oiler taken from stock and not even overhauled for the trip, I never had to touch it during the entire journey from Detroit to St. Petersburg; in other words, the oiler, in spite of the rough weather, automatically took care of all the changing conditions, kept the splash level in the crank case at just the right height throughout, lubricated every part perfectly, and, moreover, kept the total oil consumption very low."

An Enterprising Firm.

The T. J. Willis Company, 85 Chambers Street, New York, are issuing a large catalog, quoting competitive prices on general supplies, which they will be glad to mail to any MoToR BoatinG reader on request; ask for Catalog B. During November they are offering free a high-grade Morocoline leather life preserver pillow, filled with Kapoc, with all purchases of $10 or over. This pillow bears the manufacturer's tag which passes the government inspection. They refer in flattering terms to the advantages which they have derived from advertising in MoToR BoatinG and attribute their present success in no small measure to this publication. It should be remembered that the Willis Company are eastern agents for the Bryant & Berry speed propeller.

Sales and Charters.

The office of Stanley M. Seaman, New York, reports a number of sales and charters; among the former may be mentioned the 70-foot cruiser Parthenia, sold for A. A. Augustus, Cleveland, Ohio, to H. L. Rose, of Jersey City, for use in New York waters; Mareta, for Mrs. Miriam P. Smith, to Frank A. Egan, and several auxiliary yawls and sloops. The 100-foot Itasca, charted for E. B. Hawkins, to R. T. Heitmeyer, of Stamford, Conn., and the steam yacht Cassandra, the largest in the American fleet, sold for Roy A. Rainey, to George J. Whelan, of Larchmont Yacht Club.

The 60-foot bronze cruiser designed and built by the Welin Marine Equipment Company for Mr. Minor C. Keith, for use on Great South Bay. She is powered with two 40-h.p. Sterling engines.

The 1913 "Built-for-Business" Holmes.

The feature of the 1913 Holmes four-cycle engine, built by the Holmes Motor Company, Inc., Mystic, Conn., is its "get-at-ability." This has always been a good point of the Holmes motor and in the new models is developed to the greatest possible extent. Every part can be reached and removed with hardly ever any necessity for disturbing the parts adjacent. For the commercial boat this is a tremendous advantage, for every hour or day the boat is laid up for repairs takes just so much off the revenue it produces for its owner. In the new models the crank shaft can be rolled out through the side of the base, as the standards are divided in the center and one-half can be removed, leaving one side of the engine open. The pistons can be taken out in a few minutes through the bottoms of the cylinders. The Holmes people claim that on a certain repair job which they were called upon to make on an inclosed base engine, the services of three mechanics were required for six days while the same work could have been done on a Holmes by two machinists in only half a day. Incredible as this may seem, it is a fact which the company say they can prove, and makes their engines deserving of careful consideration from the prospective work boat buyer. Years ago the makers of the Holmes developed the long stroke which characterizes their motors, and this feature is, of course, retained in the 1913 line. The long stroke gives power and flexibility and has an economizing effect on the fuel bill which is well worth while. The reserve power in the Holmes is especially evident at low speeds. With the engine turning at the slowest speed the clutch can be thrown in either ahead or reverse without the slightest danger of stalling the motor. The mechanical features include extra long pistons and extra long diameter bearings throughout. In the model B four-cylinder 20-25-h.p. engine, for instance, the main bearings die cast interchangeable split bushings are 2⅛ inches in diameter. Holmes motors are used by the U. S. Life Saving Service and the Canadian government has begun installing them in its power lifeboats, which certainly proves that they have been found serviceable. In addition to the engine plant the Holmes people have a large and well-equipped yard for laying up, winter storage, and repairs. The new marine railway, one of the largest and best equipped between New York and the Cape, enables them to haul out yachts up to 150 feet in length by 25 feet in width at any tide. They will build and equip your boat complete throughout and deliver it to you ready for service.

Pronto, a 35 x 5½-foot motor boat which has made a good record on the Hudson this year. She has a 30-45 h.p. Sterling with Bosch magneto and was sold early in the season to E. B. Walker, of Nyack, N. Y., through the brokerage department of Bruns, Kimball & Co.

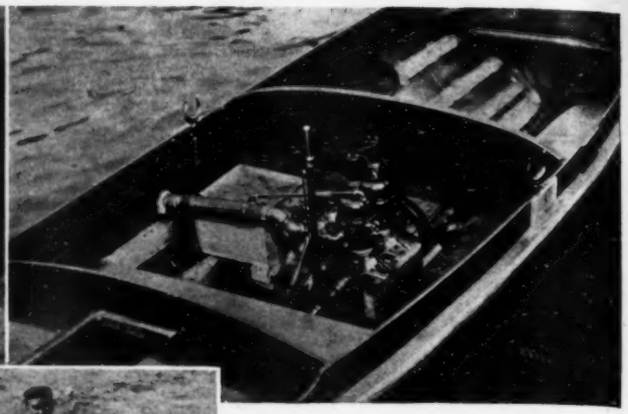
A Unique Swimming Belt.

The Auto-Pneumatic Swimming Belt, Inc., of 309 Broadway, New York, have certainly succeeded in producing a unique article in their swimming belt or life preserver. It is a device comprised of hollow aluminum ribs, covered with strong textile material. Folded, it measures but 5 in. x 6 in. and weighs 1½ lbs. It expands similarly to a concertina and is self-inflating. The manufacturers claim it to be practically indestructible, as it is rust, rot and acid proof. A descriptive booklet is at your service on request.

Trade Literature Received.

J. B. Moore, 657 K Street, Northeast, Washington, D. C., mails us an interesting booklet, descriptive of his reverse switch for two-cycle gasoline engines. This switch is guaranteed to fill satisfactorily all claims made for it; the parts most subject to wear are made of hardened vanadium steel, and Mr. Moore tells us it will last as long as the engine to which it is fitted.

L. W. Ferdinand & Co., 201 South Street, Boston, Mass., welcome any enquiries which may arise in connection with the use of Jeffrey's marine glue. This well-known product is manufactured in various grades, each specially designed for the particular purpose for which it is intended, such as deck and hull seams of yachts, cabin tops, boats, canoes, etc.



Her Columbian reversible propeller works in a tunnel, making the draft extremely shallow.

The motor is a two-cylinder, 6-h.p. Watkins equipped with Perfex ignition.

An interesting little bronze tender for Mr. Keith's 60-footer shown on the preceding page. She was designed and built by the Weiin Marine Equipment Company.

Anderson Business Booming.

The Anderson Engine Company, of 160 North Fifth Avenue, Chicago, recently increased their capital to $60,000, in order to enable them to adequately care for their steadily increasing business. A new factory at 61st Place and Archer Avenue, on the Chicago and Indiana Harbor Belt Railway, is in course of erection and will be in full operation in a week or so.

An Excellent Line.

The Rippley Steel Boat Company, Brafton. Ill., manufacture a very comprehensive line of steel hulls either complete with engines and fittings, hull only complete, or hull knocked down, numbered, and ready for setting up; they will send full details on application.

Ferros 4,000 Miles Away.

"The Ferro Fishing Fleet" is the title by which some thirty-one boats operating in the Adriatic sea off the Croatian coast, Austro-Hungary, are known. The obvious reason being that they are all fitted with motors built by the Ferro Machine and Foundry Company, Cleveland, Ohio. Turning to our illustration, the four larger boats have each two distinct power plants operating twin screws. Under normal conditions they run on one 17-h.p. motor and propeller only, using both during the frequent and heavy storms for which the Croatian coast is noted. The two smaller boats are fitted with single 15-h.p. Ferro engines; all average a speed of 10 miles an hour.

The Ferro executive evidently believe in the old adage on the result of "all work and no play" and consequently the officers, heads of departments, superintendents, foremen and office staff to the number of nearly 200 recently gave themselves over to the enjoyment of the annual Ferro picnic which has become their chief summer social event. Our illustration of the event depicts a happy crowd.

News from Bowes and Mower.

Bowes and Mower, the Philadelphia naval architects, whose offices are in Lafayette Building, are very busy with new work for the coming year. The success of Dream in the Bermuda race has brought in business from all directions; some boats are well on their way to completion, notably one for J. Wayne De Long, of similar type to Dream, but a foot more in the beam. A raised deck cruiser for Edwin Binney is also nearing completion, others are in various stages and will be in commission early in the coming season.

The All-Day Motor.

This is the title given to the products of the Frisbee Motor Company by their customers; if an amendment is admissible we suggest an addition, making the unofficial title the day-and-night-motor, for the reason that we learn of a 10-14-h.p. engine which in two years has run 22,000 miles without costing a penny for repairs. The Frisbee double and four-cylinder marine motors are deserving of special attention; the manufacturers do not exaggerate when they refer to them as "the engines of simplicity and refinement." The double cylinder motor is suitable for launches, cruising, or work boats and is made of 6-10 and 10-14 h.p. The latter is specially suited for commercial purposes on account of its unusual strength. The four-cylinder motor, of either 12-16, 16-25, or 30-40 h.p. is a typical example of simplicity, efficiency, and compactness; the design of the head valve and valve cage is specially to be commended. This engine is also constructed for speed work in a specially lightened form. The manufacturers, whose address is Middletown, Conn., will be glad to give all particulars on request.

A New Type of Lobster Smack.

The Annie Louise has arrived at Portland, Me., and is creating a good deal of local interest and favorable comment on her business-like appearance and evident capacity for hard and sustained service. She is a 55-foot lobster boat, having two masts, heavily timbered hull, ample quarters for the crew, and capacity for 7,000 lobsters. She is equipped with a 28-h.p. four-cylinder, four-cycle heavy duty Regal motor, manufactured by the Regal Gasoline Engine Company, of Coldwater, Mich., and installed by their Portland agent, Arthur N. Smith. On a trial trip from Jonesport, the craft averaged over eight m.p.h. and it is confidently expected that when the engine runs itself in this average will be substantially improved upon.

Marine Motors at St. Pierre.

The 600 or 700 dory fishermen in St. Pierre have begun to think seriously of the possibilities of the internal combustion motor and now that the movement has started it is more than probable that the majority of them will have power boats within the next year or two. About thirty are already using small motors of about 2½ h.p. with very satisfactory results.

A Correction.

In our last issue we referred to Tech, Jr. as being fitted with a Van Blerck engine. We are advised by the Sterling Engine Company, of Buffalo, N. Y., that some little time before the elimination trials at Huntington Bay that this engine was removed and an eight-cylinder 150-h.p. Sterling substituted.

New Branch for Loew Co.

The Loew Manufacturing Company, of Cleveland, Ohio, advise us that they have arranged to establish a branch at Boston, Mass. This will open immediately and will be in charge of Wm. H. Hand, Jr.

The 16-ft Clinker-built yacht tender built by the Gas Engine & Power Company and Chas. L. Seabury & Company, Cons., for Mrs. J. R. Riley's schooner yacht.

The Peter Pan Family.

(*Continued from page* 35)

son River Yacht Racing Association on Labor Day, 1912.

Mr. Simpson has driven all the Peter Pans himself, and, of them all, he says the nicest and sweetest is Peter Pan—(no, not Fifth) Fourth! She was and is the apple of his eye. He declares there never was a boat so altogether enjoyable as Peter Pan IV. She is fast—27 miles an hour is going some—but she is steady and comfortable and dry. He says: "It's a sensation to skim over the water at the rate of 46 miles an hour—a sensation few have experienced—but there is no comfort in a world-beating hydroplane. There *is* comfort, there is real enjoyment and pleasure for your friends in a Peter Pan IV." And it was this that Mr. Simpson wanted, and he, perhaps, did more to develop and promote this kind of enjoyment than any other one man.

Gasoline, Kerosene and Crude Oil.

(*Continued from page* 25)

and combustion of the charge is as rapid as possible, resulting in a high initial pressure which falls to a point somewhat below that of combustion as the point of exhaust is reached.

In the type of Dr. Rudolf Diesel, which is that referred to above, the air alone is compressed in the cylinder to some seven or eight hundred pounds, the resulting temperature being above that necessary for ignition of the fuel. The fuel is then injected more or less gradually and burns during a portion of the working stroke, avoiding the extremely high initial pressure, but giving a high average pressure during most of the stroke. By keeping the proportion of fuel a little low, it can be seen that all of the objections mentioned before in connection with kerosene fuel are overcome.

Heating and consequent vaporization take place in the presence of a sufficient quantity of oxygen, all precipitation due to cooling is avoided and as the fuel is gasefied by the heat of the air itself it cannot "break up."

No ignition apparatus is necessary as the fuel combines with the heated air spontaneously, and as the heat of the air rather than that of the motor is utilized for vaporization, the power output may be controlled by restricting the fuel supply, a full charge of air being taken at every stroke.

Apparently, this type of motor offers the only satisfactory solution of the problem and undoubtedly its principles will be applied to the construction of small motors long before we are compelled to use non-volatile fuel oils.

There are two reasons for the many attempts to produce a satisfactory kerosene motor. The much greater production of that fuel and the present difference in cost, and secondly the lessened danger of handling it.

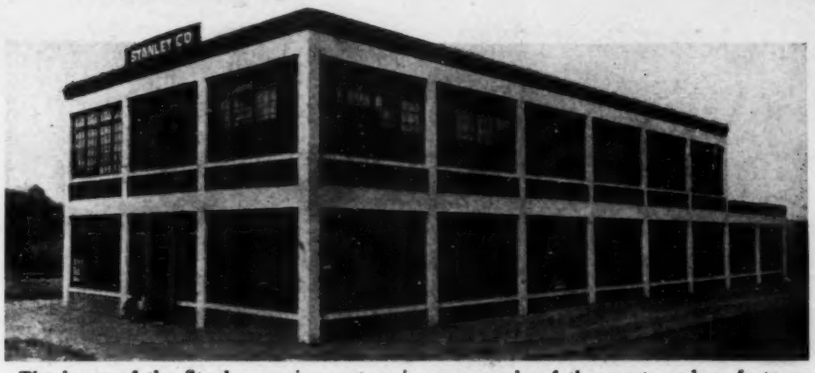
As there is approximately four times as much kerosene as gasoline in petroleum, the supply is unquestionable. It must not be forgotten that there is a considerable demand for it, however, for other purposes, and if any considerable proportion of the motor users transferred their affections, there would probably be little difference in price. There is not a great difference in the heat values of the two fuels, by weight, but as they are sold by bulk, the greater density of kerosene gives it an advantage of about ten per cent.

As both are composite liquids and vary in their composition as well, the results of calorimeter tests are of little value. At this time, the only strong argument in favor of the use of kerosene that the writer can see is the absence of danger from fire or explosion, but the possibility of trouble from these sources even when using gasoline may be made very remote.

Bruns-Kimbal Co.'s Rebuilt Engines.

The Bruns-Kimball Co., 132 Liberty Street, have very greatly increased the sale of marine motors by finding a market for used engines. Their system is to make a very liberal allowance on a used engine as part payment for a new one. These used engines are thoroughly overhauled by expert mechanics in the Bayonne shops of the Bruns-Kimball Co. This company is particularly fitted to handle large quantities of rebuilt engines, on account of their wide range of territory. For instance, they have recently shipped engines to Alaska, Bermuda, and many far western states.

In an interview Mr. Kimball stated that the prospects for next year were particularly bright. He is securing all the Sterling engines he can get and storing them in their warehouse so as to be able to make deliveries at a time when the factory will be swamped with orders. Bruns-Kimball Co. are the Eastern agents for the Sterling. They recently equipped the beautiful yacht Aida with a heavy-duty Sterling, and through their brokerage department sold same to Mr. Stevenson of Wells, Mich. The yard and shop of this company are located at the foot of 40th and 41st Streets, Bayonne, N. J.



The home of the Stanley marine motors is an example of the most modern factory construction.

Old Dog, the good little Samaritan equipped with a 12-h.p. Gray motor.

Gerald T. White Opens New Offices.

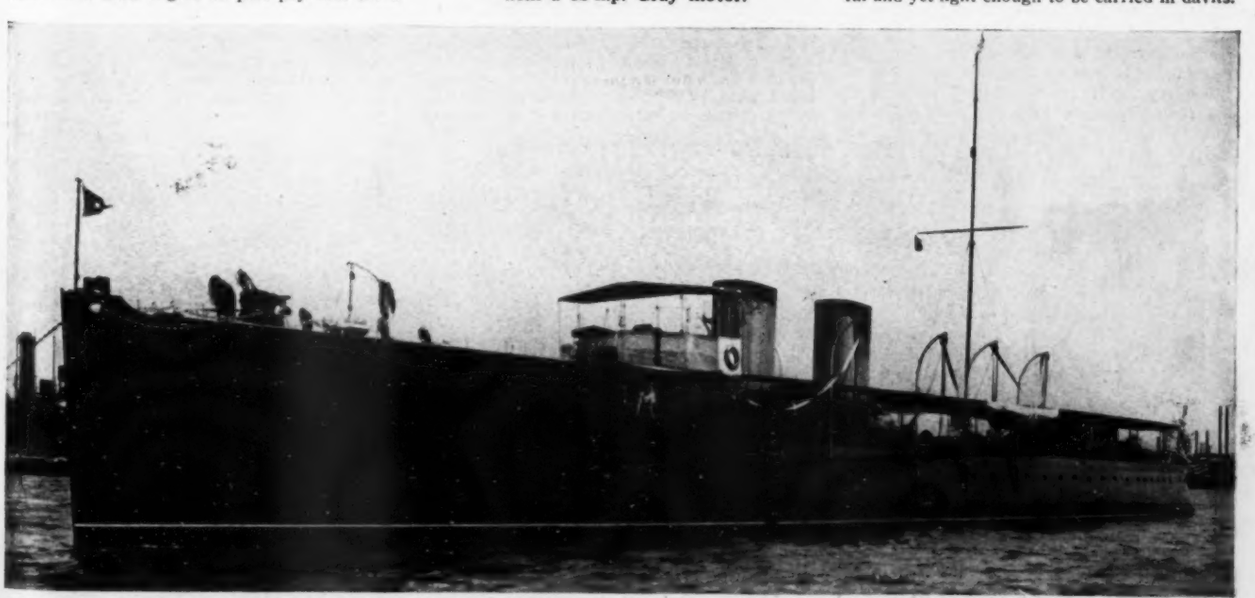
Gerald T. White, who for several years has been boat designer for various builders of high-grade hulls, has opened an office in rooms 302 and 303 Vanderbilt Building, 132 Nassau Street, New York. Mr. White will specialize on low-priced designs, for amateur and professional builders, his leader being V bottom runabouts; he also holds the New York and Long Island agencies for the Moore reverse switch and will send sketches, designs, etc., on application.

A Good Little Samaritan.

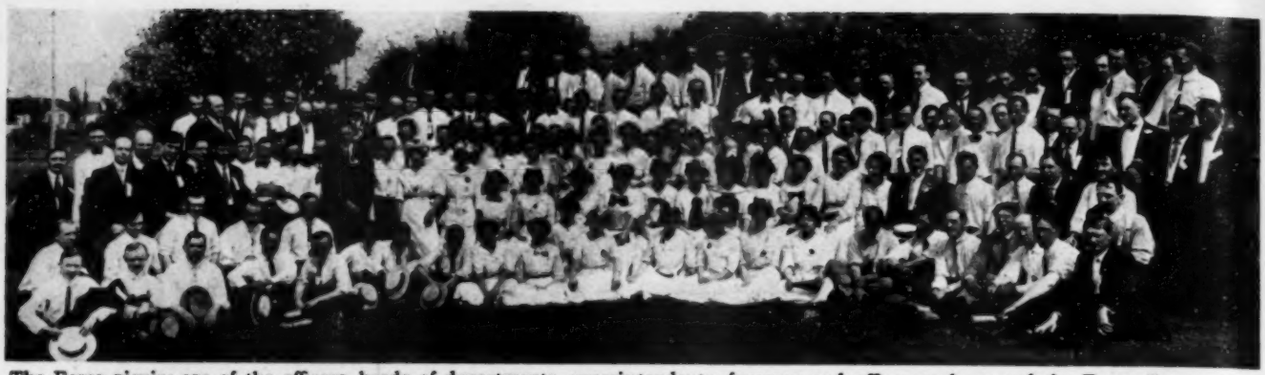
The Gray Motor Co., of Detroit, send us the photo of the "Old Dog," reproduced on this page. The boat is the property of Assistant Lightkeeper Ross F. Wright, of Manitowoc, Wis., and has an enviable record of rescues of both life and property to her credit. Her one-day record covers two separate and distinct rescues of both craft and vacation parties. She is engined with a 12-h.p. Gray motor.

A Smart Yacht Tender.

We illustrate on the opposite page a 16-foot clinker-built yacht tender which has just been completed by the Gas Engine & Power Co. and Charles L. Seabury & Co., of Morris Heights, New York City, for Mrs. J. R. Riley, of New York, who intends to use it as tender to her schooner yacht in Florida waters. This little boat, fitted with a single cylinder, two-cycle Speedway motor, Bosch ignition and reverse gear, in other words, with full equipment, weighs just 970 pounds, although built extra strongly of oak and white cedar, finished in mahogany, and calculated to stand the usually excessive strains to which boats of this class are usually put. Power boats of this type are in increasing demand as tenders for gasoline yachts; they are large enough to be really useful and yet light enough to be carried in davits.



The new 45-mile steam yacht Winchester, designed by Messrs. Cox & Stevens for Mr. P. W. Rouss. She is 205 ft. over all, was built by Yarrow and is equipped with Yarrow turbines.



The Ferro picnic; 170 of the officers, heads of departments, superintendents, foremen and office employees of the Ferro Company on the Annual Outing. The day was given over to sports and a general good time and President Oglebay made a home-run.

A Trip To Nowhere in a 16-Footer.

(*Continued from page 8.*)

Any reply to this would have sounded feeble, so we remained silent and later on breakfasted as the chef had predicted. At lunch time, after a dreary morning, we ate again of the same fare, and then the chef rebelled. He learned from us and the chart that Oyster Bay was the nearest place for supplies, and declaring that alcohol for the stove was more greatly to be desired than life or great riches, he proposed venturing a trip there.

Vainly we pointed to the white-capped water and predicted a swift, sure death should we, in the Helen H., go outside; he would not listen, but chided us on our yellow streak until we savagely agreed to do and die.

The rain had let up a little when we started out of the creek, but the wind was terrific and it was all we could do to keep the spray-hood tight. As we turned the last bend in the creek, Oyster Bay, lashed into foam, appeared before us and we turned appealing eyes to the chef. Grimly he sat on the stern chock in silence, and so, with a lingering thought of the New Rochelle boarding house that we should never see again, we shot out into the bay.

As we felt the Helen H., gripped in the trough of the waves we put the wheel hard over, with the idea of running into the bay before the storm. It has not been mentioned that the Helen H. has a torpedo stern that slants outward to the water line. This kind of a stern was "pie" for those waves. They galloped up the sloping transom like playful kittens, coiling around the chef's waist in cool embrace.

He yelled and stood up just as one white-whiskered comber shoved the Helen H. halfway around. The chef fell. His left arm slipped over the wet coaming into the water and his heels flew up into the air. With a brave cry of "I gotcher Steve" we grabbed his right foot and held on, letting go the wheel. In a moment the Helen H. had swung broadside to the waves. For one harrowing moment she was rocked until it seemed that she must go over, and just as we managed to pull the chef back into the cockpit a sizzling, seething foam-rimmed monster swept over us.

(*End of First Installment.*)

The New Ferro Catalog.

C. B. Page and W. P. Street, of the Ferro Machine and Foundry Company, Cleveland, Ohio, the former, sales manager for the United States and Canadian departments, and the latter, export sales manager, have taken over the direction of the company's advertising department, an organization which has been responsible for some of the finest trade literature in the marine engine industry. Mr. Page and Mr. Street bring to this work a long experience in both salesmanship and advertising, backed by a technical knowledge of the industry from its inception. The new catalog for 1913 is now in course of preparation and will be in the hands of Ferro distributors and agents in good time for the coming year's campaign.

A Bath Hydro-Runabout.

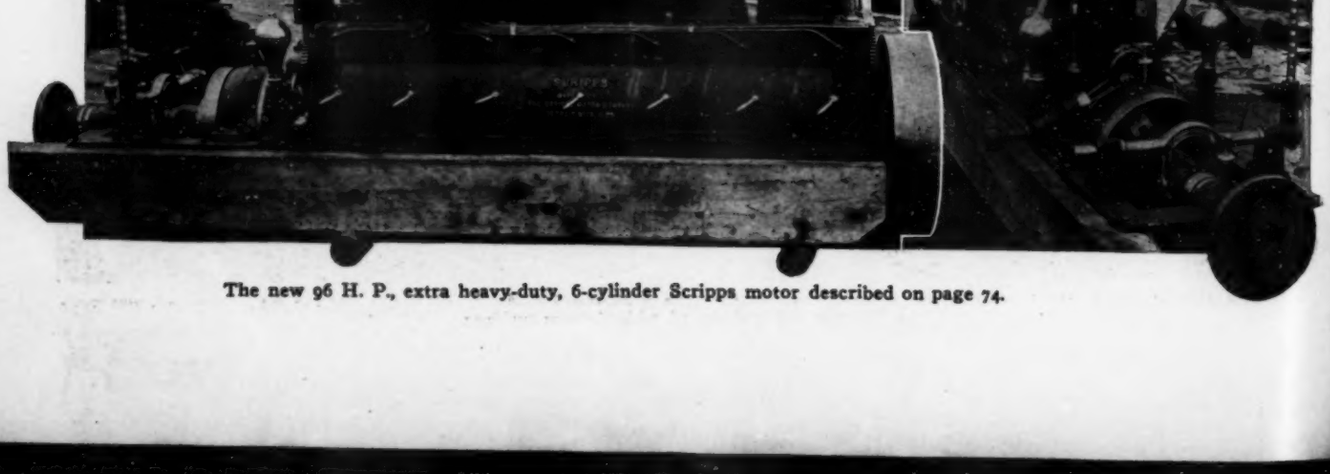
The illustration on page 46 gives an excellent idea of one of the Bath V-hydroplanes in action. This boat was built from the knock down by Harry C. Holbrook of the firm of architects Dawson and Holbrook, of Columbus, O.; he tells us that a speed of 24 m.p.h. has been obtained with his 40 h.p. engine which however is not yet tuned up to its designed speed; at the same time it is doing good work when the fact that the boat is heavily built is taken into consideration. The craft has been named the Aprisa II.

The auxiliary lobster smack Annie Louise. She was built by the Adams Shipbuilding Company for N. F. Trefethen & Co., and is equipped with a 28-h.p., four-cylinder, four-cycle, heavy-duty Regal engine. The boat is 55 ft. over all and cost $4500 completely equipped.

The Dirigo Whistle Outfit.

Walter Coleman & Sons, Providence, R. I., have, after thorough tests, brought out a simple, reliable, and effective whistle outfit at a

(*Continued on page 73*)



The new 96 H. P., extra heavy-duty, 6-cylinder Scripps motor described on page 74.

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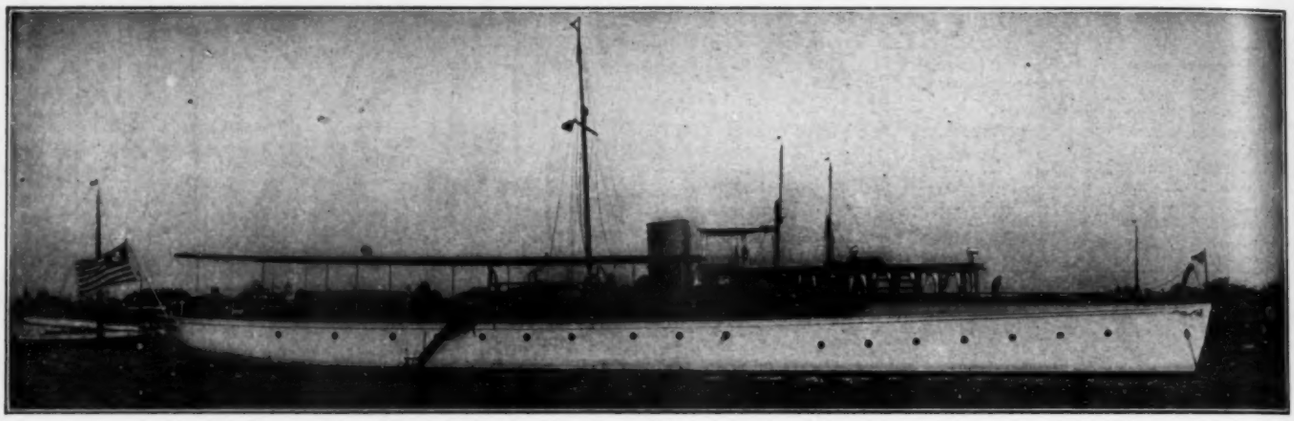

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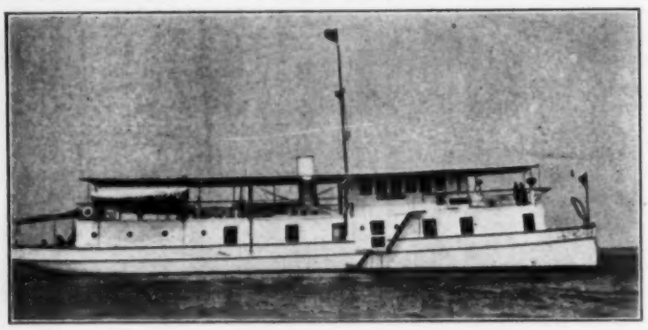

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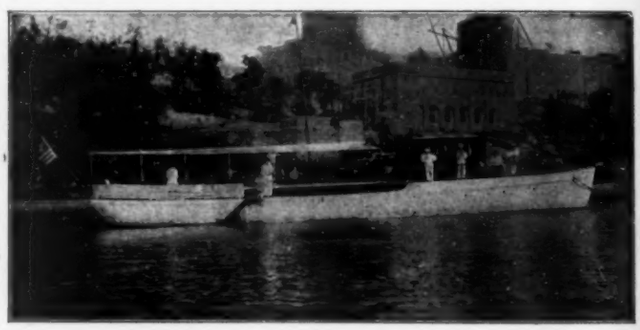

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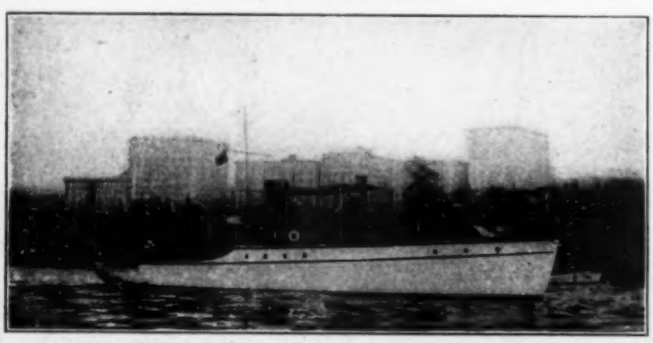

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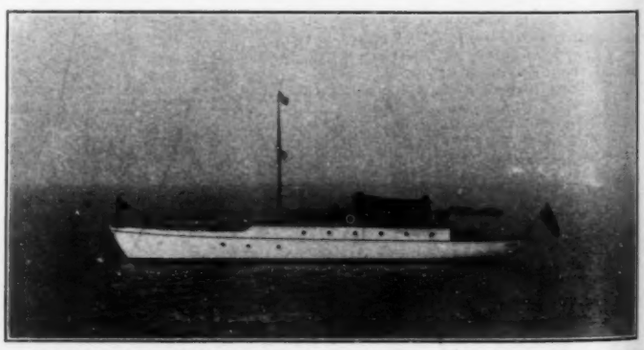

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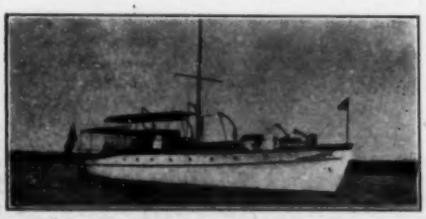
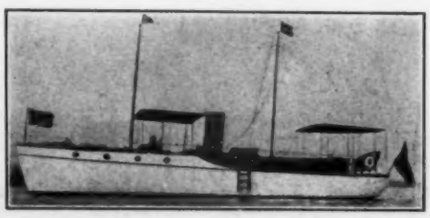


No. 726.—For Sale.—Raised deck cruiser, 65 x 13.8 x 3.6. Speed 12-14 miles. Double and single stateroom, large saloon, electric lights, etc. Cox & Stevens, 15 William St., New York.



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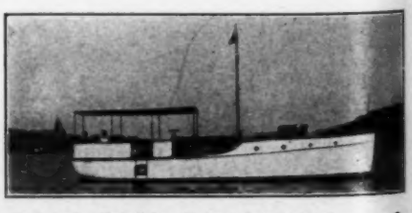

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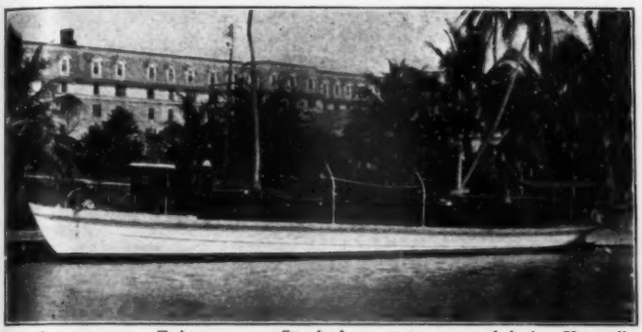

5762.—97 x 17. Twin-screw; 50 Standards; 3 staterooms and bath. Unusually able and comfortable. Sale or charter. Seen Jacksonville. Stanley M. Seaman, 220 Broadway, New York City.

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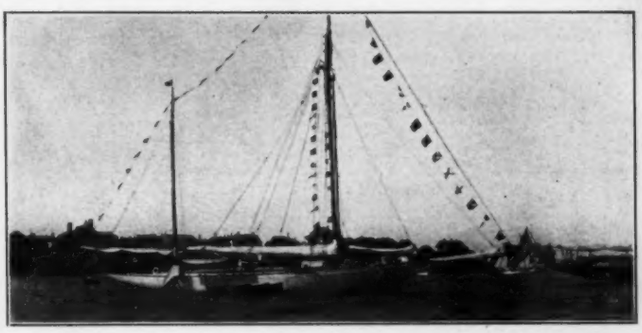
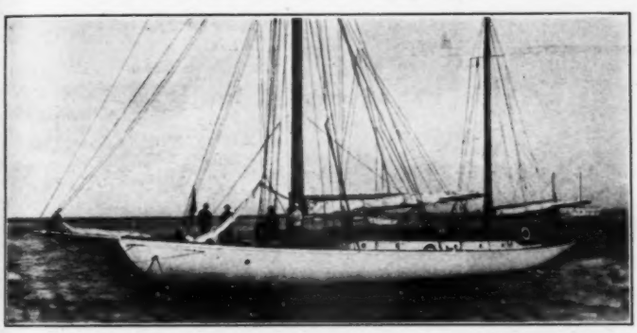


11385.—Grand shoal draught cruiser; 83 x 22.2 x 3.10. Two staterooms, saloon, bath; 40 Standard, speed 8 miles under power. Over $5,000 spent on permanencies, 1912; everything in perfect condition. One of the best of the type available. Now in Florida. Low price. Stanley M. Seaman, 220 Broadway, New York City.



11199.—Very able coast cruiser; 86½ x 17 x 4. Built 1910. Four staterooms, bath; 25 Standard engine. Very low price. Stanley M. Seaman, 220 Broadway, New York City.

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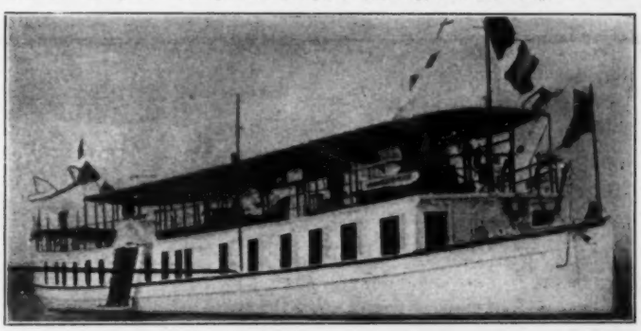
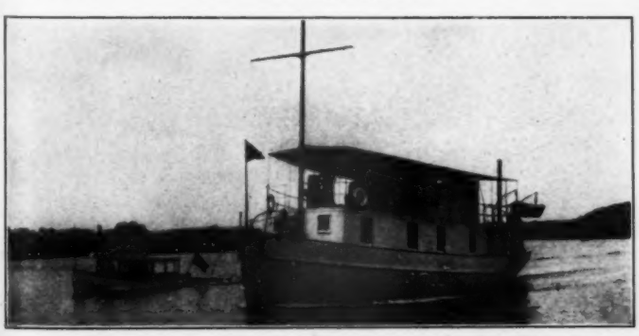


6071.—Twin-Screw House Boat, 123 o. a., 17 beam. Five staterooms, 2 baths. Two 75 Standards, speed 10 miles. Electric lights; hot water heat. Elegant appointments. Now in Florida. Exceptionally low price. Stanley M. Seaman, 220 Broadway, New York City.



7081.—64 x 17 x 3½. Lawley build. Four staterooms, 2 saloons, bath. 25 Standard Ideal cruiser. Stanley M. Seaman, 220 Broadway, New York City.

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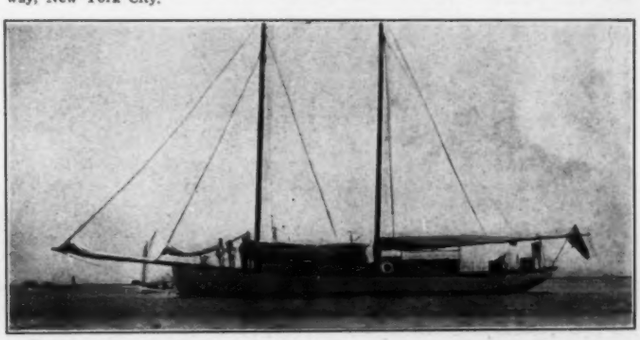

11372.—64.3 o. a., 17.2 beam, 3.3 draught. Large stateroom and saloon; 2 toilets. 30 H. P. engine. Reasonable price. Stanley M. Seaman, 220 Broadway, New York City.

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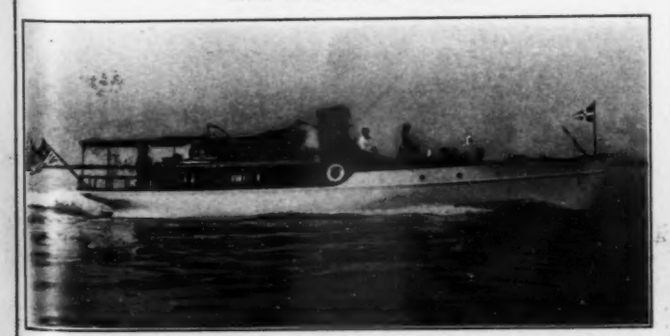

7106.—Latest Cruiser, 56 o. a., 3½ draught. Stateroom, saloon; 85 Murray & Tregurtha, speed 15 knots. Stanley M. Seaman, 220 Broadway, New York City.

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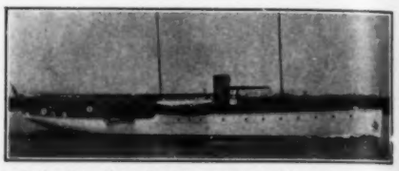

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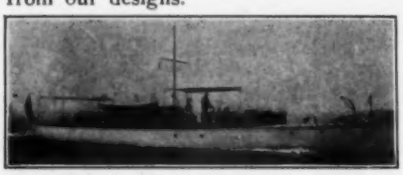

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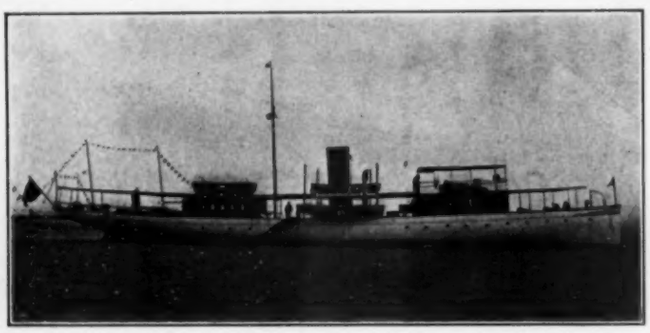
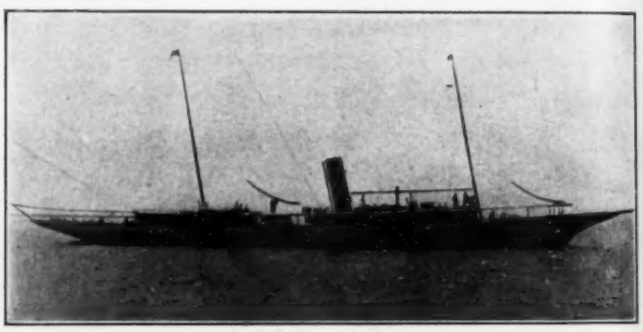


"Ranger," steel, 145 x 22 x 7.6 ft.; twin screw; steam; 17.5 miles; sea-going and very able.



"Hauoli," steel, 211 x 22.3 x 9.3 ft.; steam; 23 miles; fastest single screw steam yacht.
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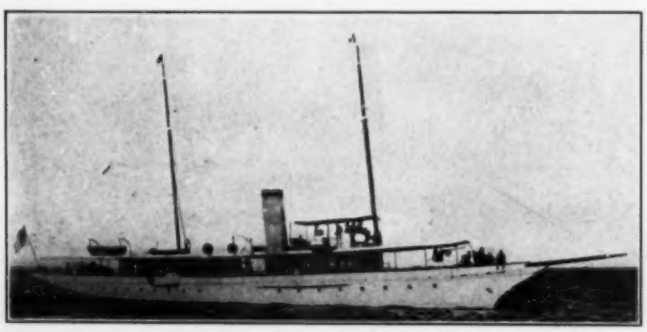

"Kajeruna," steel, 153 x 17.6 x 8 ft.; steam; 21 miles; nine years old; still up to date.
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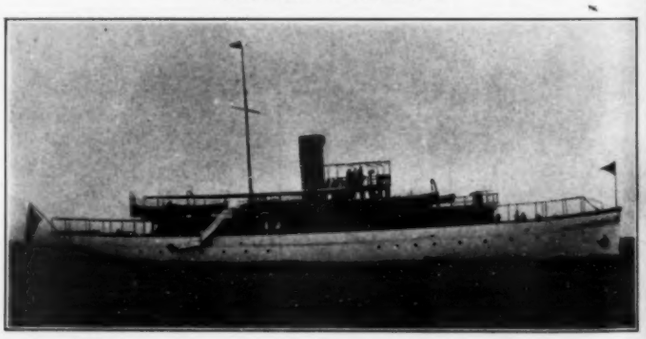

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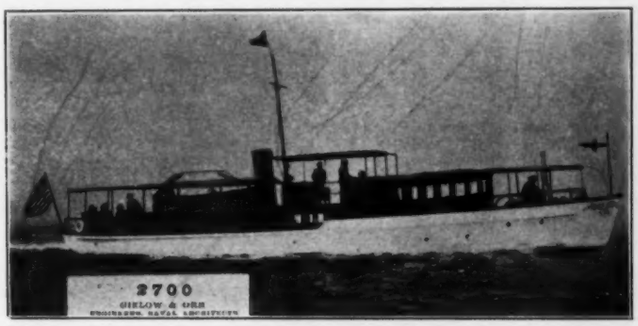
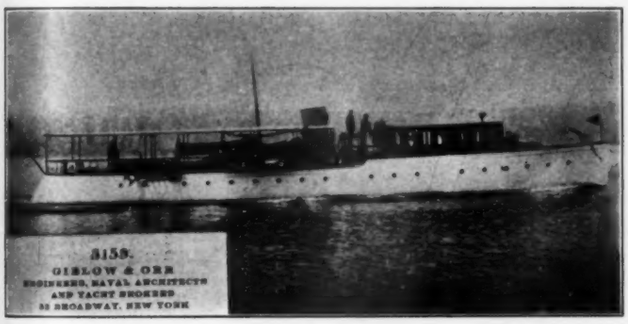
As there are upwards of 3,000 yachts in our list, we can furnish you with exactly what you want, whatever the type, size, cost, equipment or class of service you have in mind. We publish no book of these, because our list is so large and constantly changing, but we will promptly submit photographs and full information on all suitable boats on the market, if you mention your requirements.

Our long experience as architects and engineers lends an added value to our brokerage service, in expert appraisal and advice, estimates and supervision on alterations, etc.

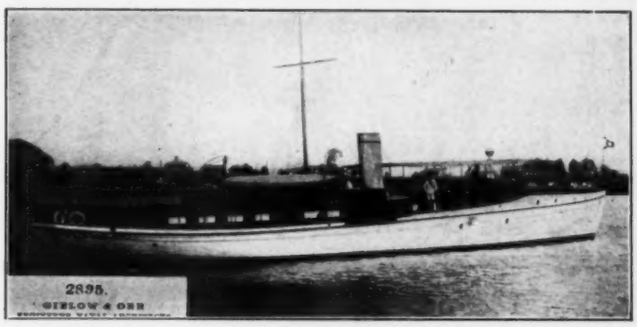
No. 3556.—Sale, twin screw, 75 feet; splendid condition and equipment.
Please mention MOTOR BOATING.



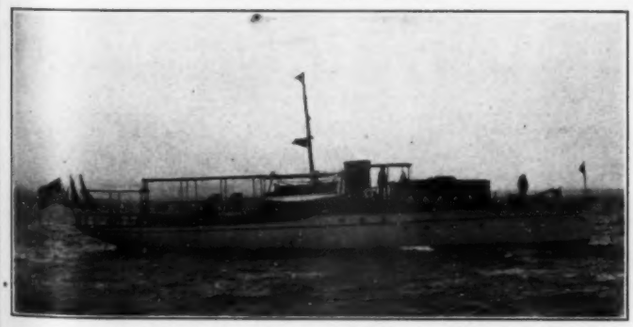
No. 2700.—Sale, charter, favorable terms.—78 ft., twin-screw. Excellent for South.
Please mention MOTOR BOATING.



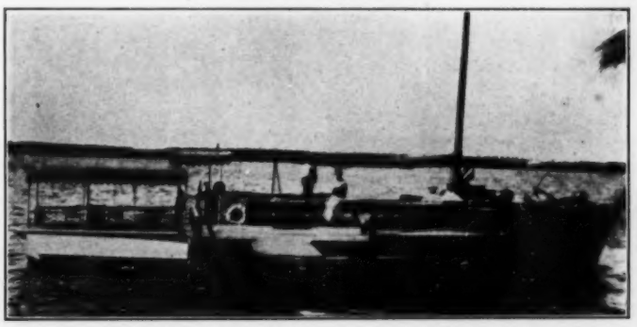
No. 3159.—Sale—Charter.—98 ft. twin-screw; 14-16 miles.
Please mention MOTOR BOATING.



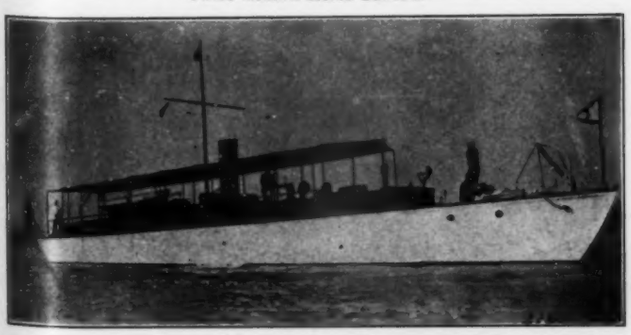
No. 2895.—Sale, low price.—100 ft. power yacht; speed 12-14 miles. Fine seaboat.
Please mention MOTOR BOATING.



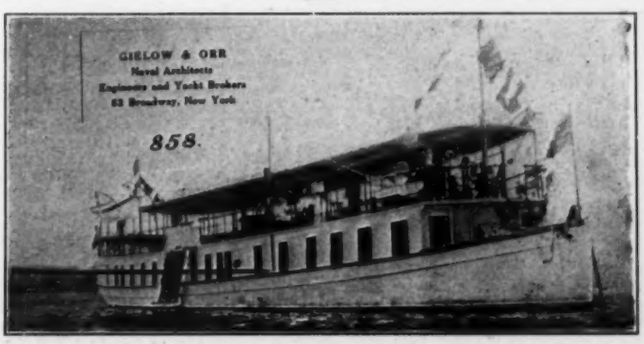
No. 3910.—Sale.—90 ft. twin-screw; launched this year.
Please mention MOTOR BOATING.



No. 3913.—Sale.—55 ft. x 32 in. draft. Located Florida. Estate will sell at attractive figure.



No. 2165.—92 ft.; 18 miles; twin-screw power yacht; offered by estate at low figure.
Please mention MOTOR BOATING.



No. 858.—Bargain, owned by estate. 125 x 18 x 3.5 ft. Located Florida. Five staterooms, large saloon.

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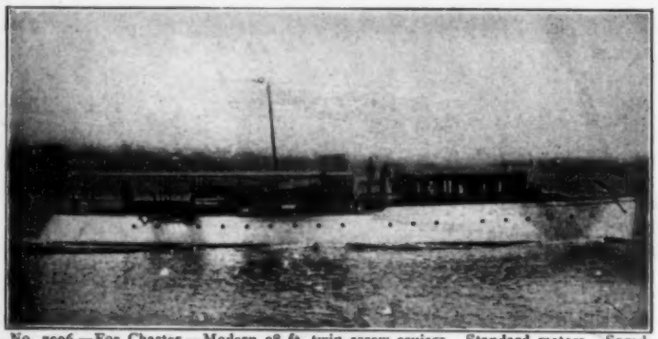
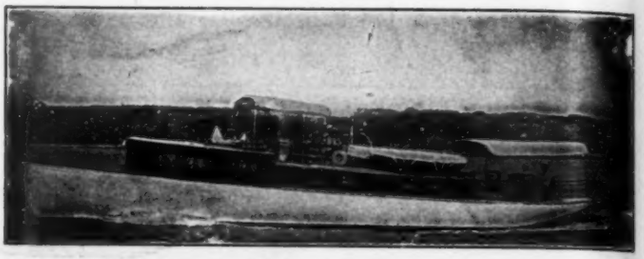
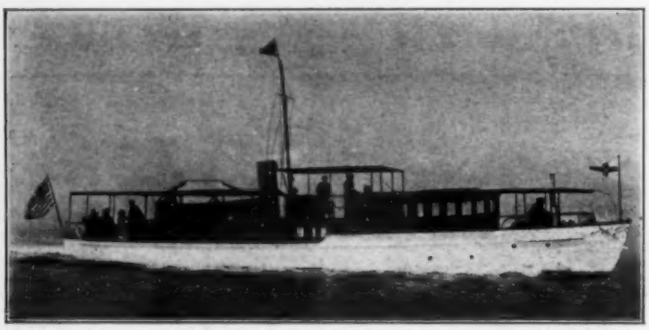
Offer for sale the following yachts, all of which are also available for Southern charter.



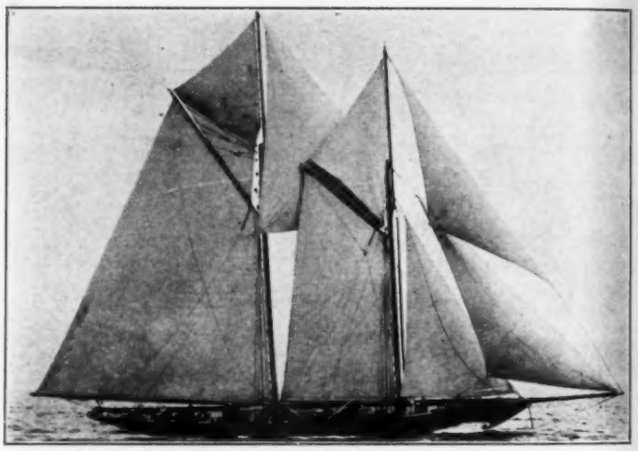
No. 7996.—For Charter.—Modern 98 ft. twin screw cruiser. Standard motors. Speed 14 to 16 miles.
Please mention MOTOR BOATING.



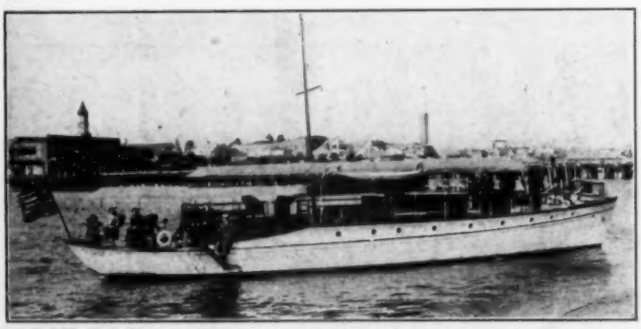
No. 7334.—For charter only, desirable twin screw 65-ft. cruiser; speed 12 miles.
Please mention MOTOR BOATING.



No. 7343.—For Charter—Exceptionally desirable 76 ft. twin screw motor yacht for southern cruising.
Please mention MOTOR BOATING.

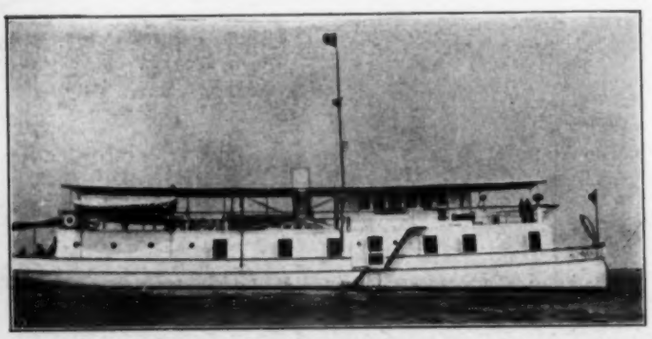


No. 97.—For Sale—Desirable auxiliary schooner, 115 ft. overall, 86 ft. water line, 22 ft. 6 in. beam, 13 ft. 6 in. draft; 100 H. P. Standard motor.
Please mention MOTOR BOATING.

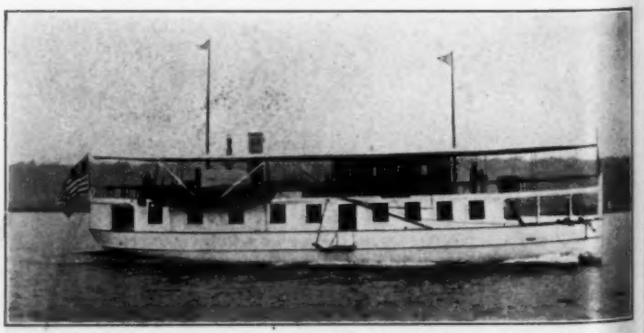


No. 7674.—For Sale or Charter.—75 ft. twin screw; 2 staterooms, saloon, bathroom, etc.; large deck space.
Please mention MOTOR BOATING.

No. 7717.—For charter only—Desirable 60 ft. cruiser; Jencick motor; speed 12 miles.
Please mention MOTOR BOATING.



No. 1820.—Sale or Charter.—Twin screw houseboat, 103 ft. x 94 ft. x 20 ft. 4 in. x 2 ft. 8 in. draft.
Please mention MOTOR BOATING.



No. 1837.—For Sale or Charter.—Modern 87 ft. houseboat; twin screw; 20th Century motors.
Please mention MOTOR BOATING.

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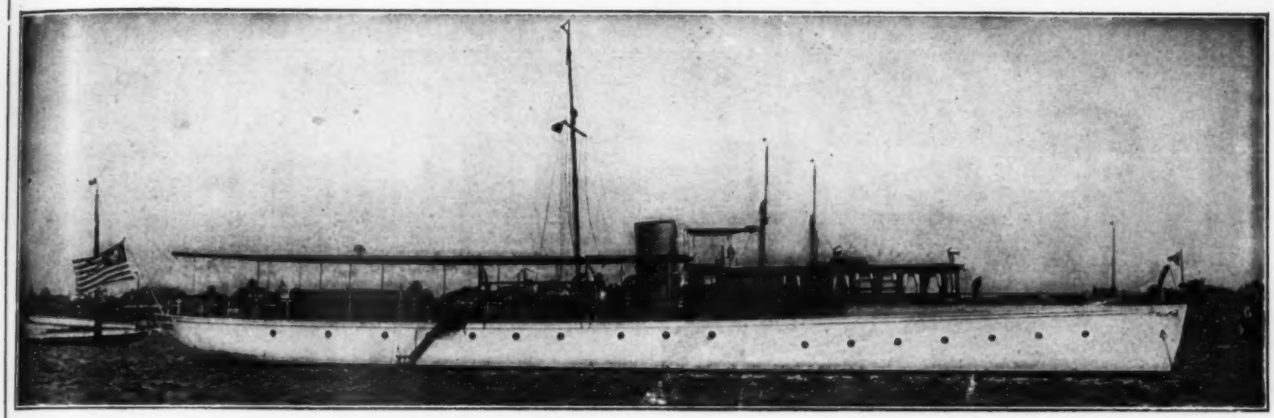
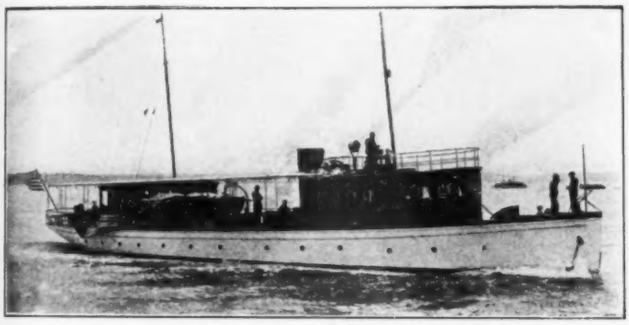
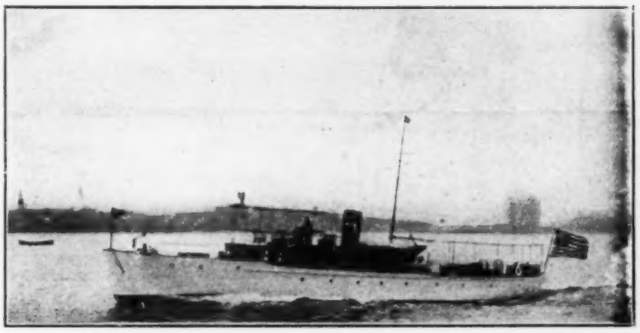


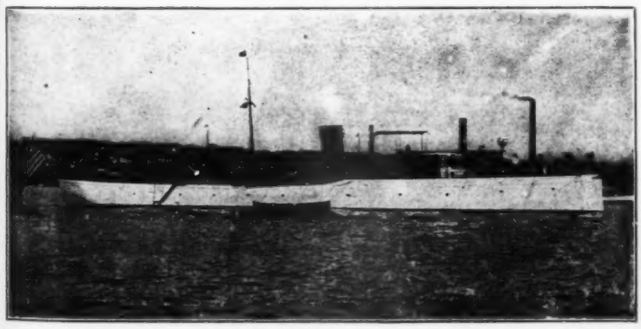
No. 1553.—Gasolene yacht, 118 ft.; twin-screw; exceptional accommodation; speed 16 to 18 miles.



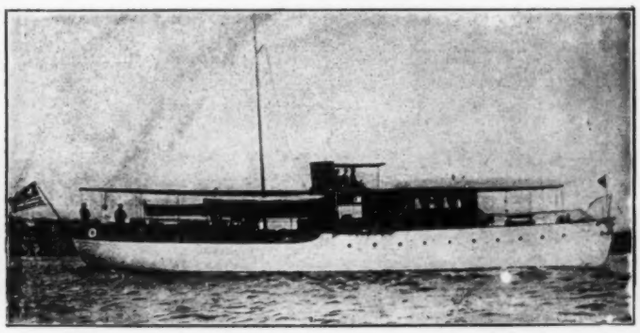
No. 1558.—First class gasolene yacht; 98 x 16; two motors.
Please mention MOTOR BOATING.



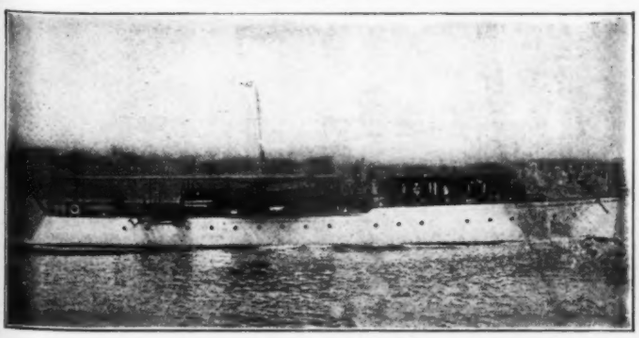
No. 1815.—Sale, Charter.—Twin-screw motor yacht. 105 x 13 x 5 feet. Three staterooms, two baths.
Please mention MOTOR BOATING.



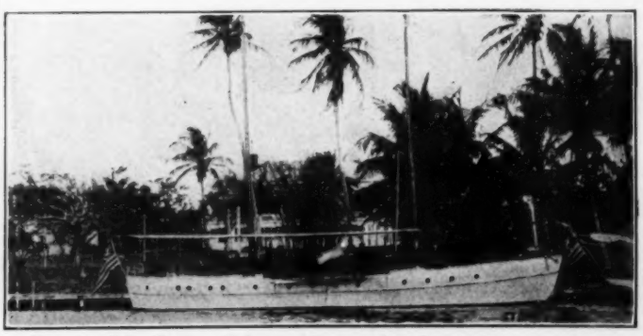
No. 1388.—Twin coast cruiser, Lawley build, 112 o. a.; 5 staterooms; bath; speed 14 knots.
Please mention MOTOR BOATING.



No. 1483.—Ideal 90 ft. twin-screw cruiser; 4 staterooms, large deck dining saloon.
Please mention MOTOR BOATING.



No. 1523.—For Charter.—Fast, commodious 98. ft. twin-screw cruiser; built 1910. Standard motors.
Please mention MOTOR BOATING.



No. 461.—Sale, Charter.—Twin-screw house yacht. Large saloon, 4 staterooms.
Please mention MOTOR BOATING.

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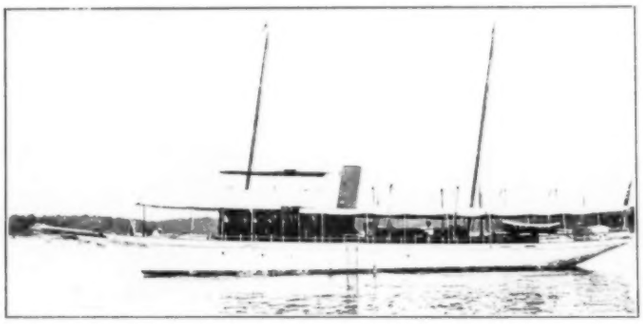
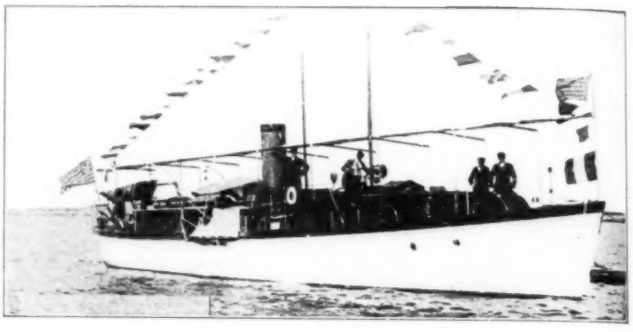
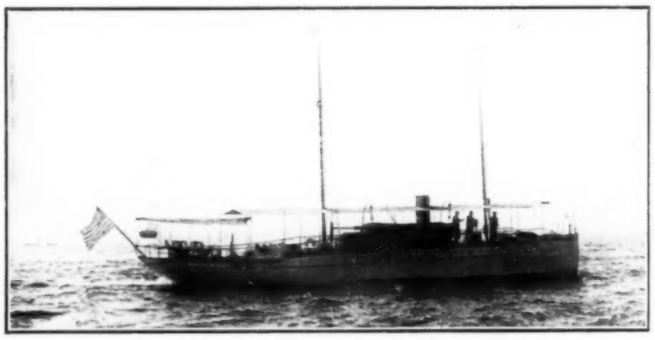


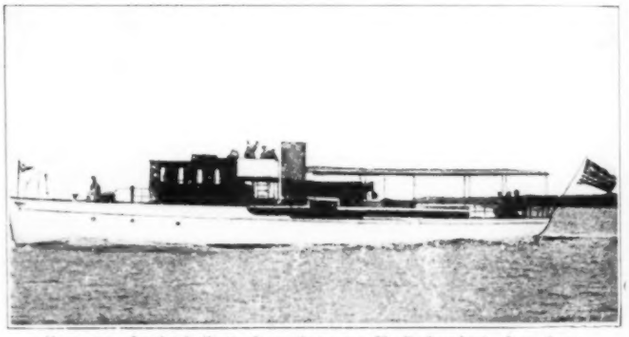
No. 1259.—Flush deck, 98 x 16; large Standard motor.
Please mention MOTOR BOATING.



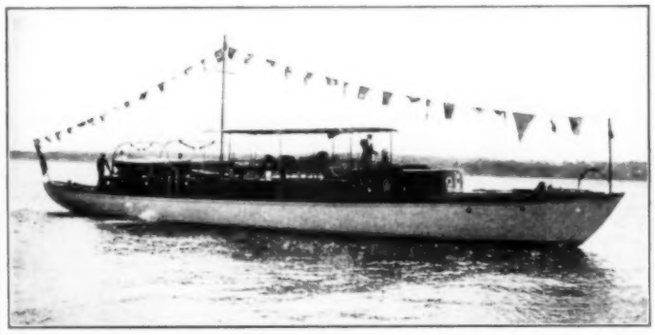
No. 1264.—Lawley-built 80 ft. cruiser; 100 H. P. Standard. Low figure.
Please mention MOTOR BOATING.



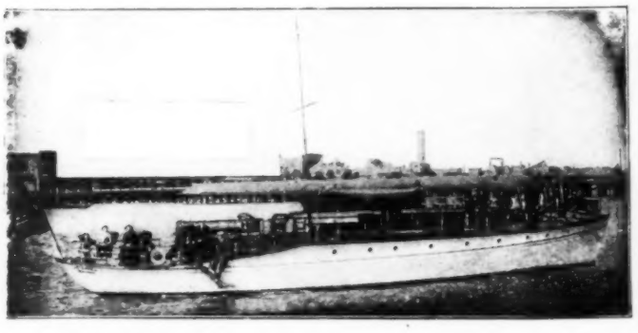
No. 1760.—85 ft. gasoline cruiser; Standard engine.
Please mention MOTOR BOATING.



No. 1264.—Lawley-built 80 ft. cruiser; 100 H. P Standard Low figure
Please mention MOTOR BOATING.

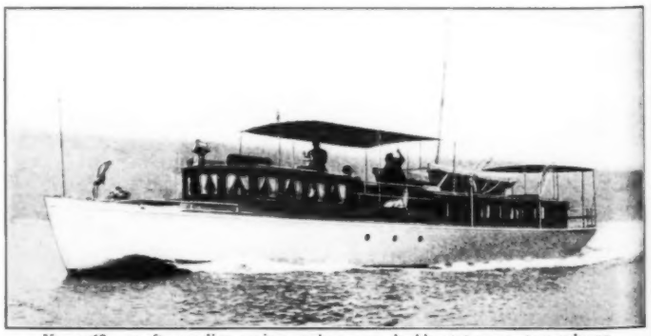


No. 1354.—Able and roomy 93 ft. twin-screw launch; two 60-75 H. P. Craig engines. Low figure.
Please mention MOTOR BOATING.



No. 1335.—For Sale or Charter.—75 ft. twin-screw; 2 staterooms, saloon, bathroom, etc. Large deck space.
Please mention MOTOR BOATING.

No. 1121.—Sale, 60 feet, double and single stateroom, cabin; 40 H. P. motor.
Please mention MOTOR BOATING.



No. 1568.—70 ft. gasoline cruiser, twin-screw; double stateroom, two saloons.
Please mention MOTOR BOATING.

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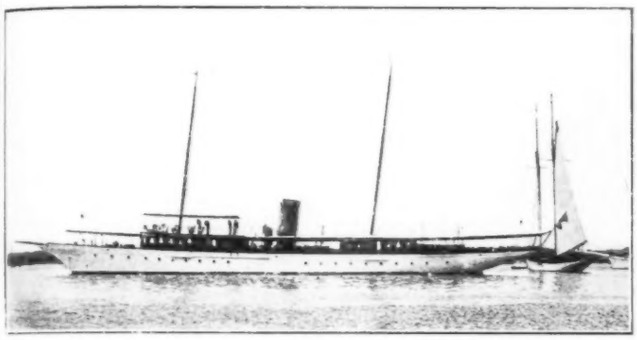
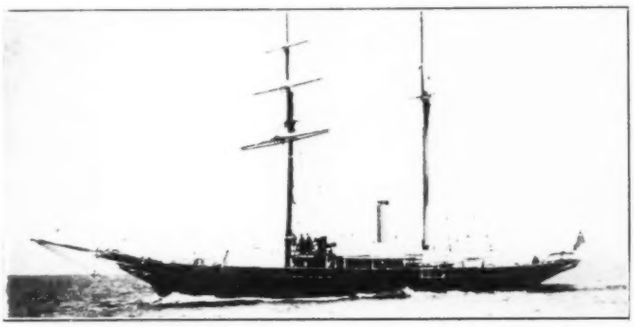
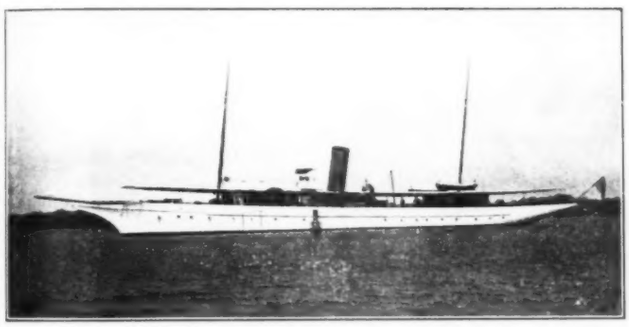


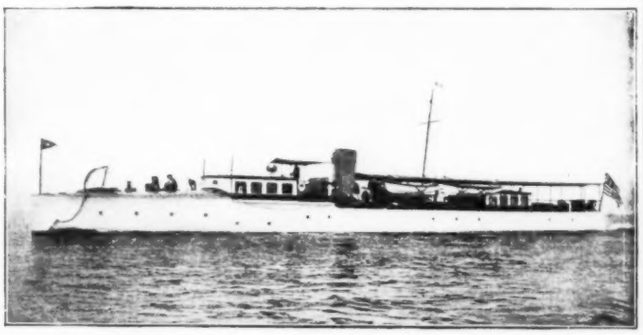
No. 482.—Offered by Estate. 170 ft. steel steam yacht; 7 staterooms, 4 baths. A-1 condition.



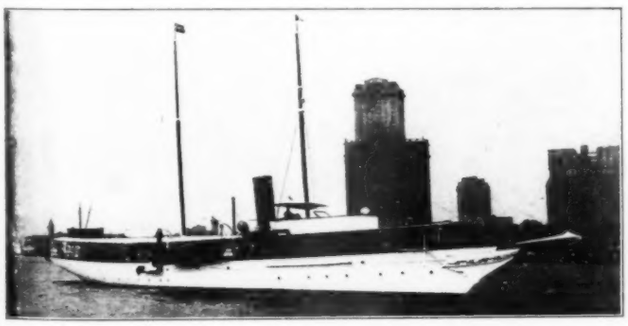
No. 405.—Auxiliary, steam power, 144 ft., adapted deep sea cruising.



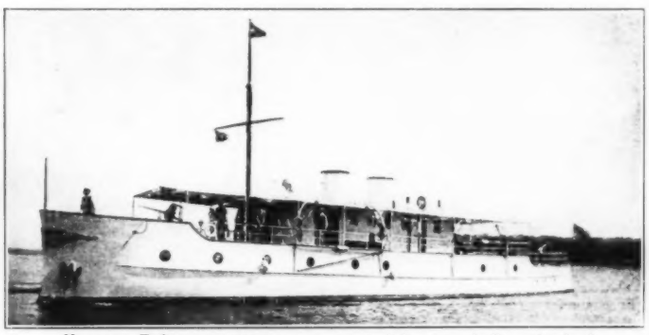
No. 181.—Steel, twin screw, 155 ft; good speed and accommodation.



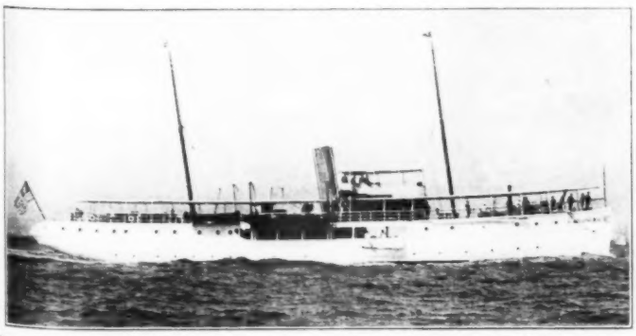
No. 618.—Sale or Charter.—135 ft. steel steam express cruiser. 4 staterooms. Elegant appointments. Speed 17 knots.



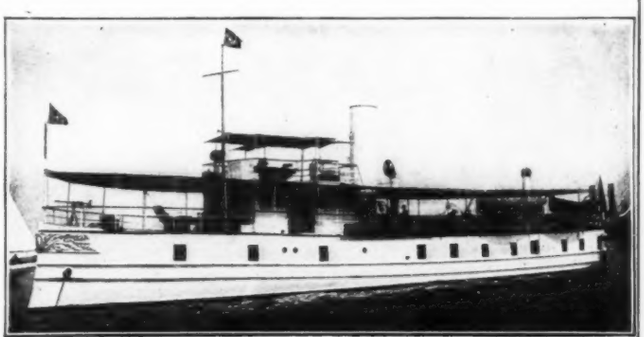
No. 170.—Sale or Charter.—Modern steel steam yacht, 150 x 18 ft.; excellent accommodation; A-1 condition.



No. 510.—Twin-screw, steam power, 100 x 18.6; economically maintained.



No. 335.—Steel coast cruiser, 176 x 24.7. Nine large staterooms. Four baths. Speed 16 miles.



No. 422.—Very able and handsomely furnished houseboat; twin screw; 116 x 21 x 4; recent build; sale or charter.

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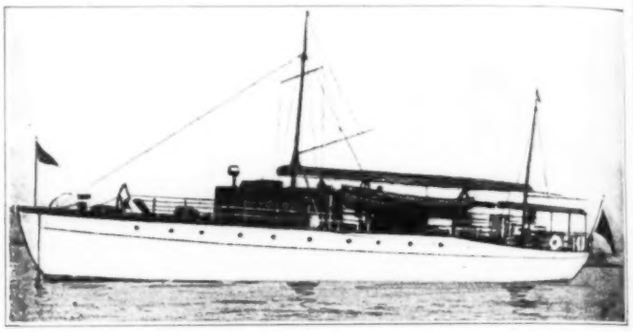
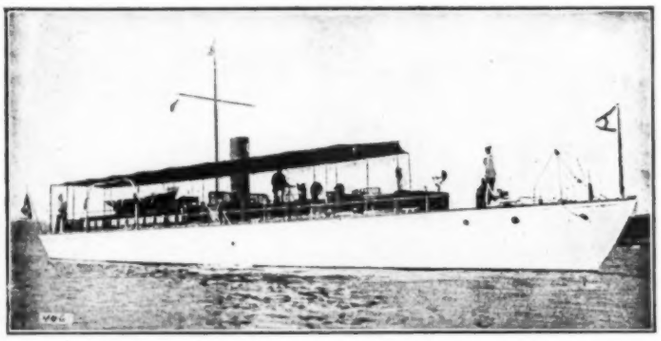
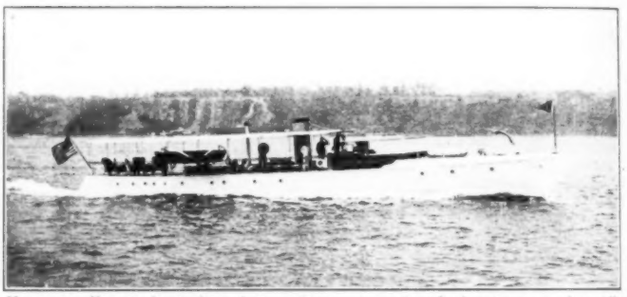
No. 1360.—Cruising power boat, 100 x 17; unusually seaworthy; speed 12-14 miles. Sacrifice price.



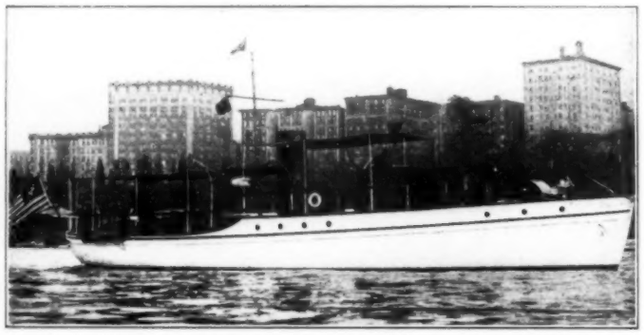
No. 1766.—New raised deck cruiser, 75 x 14; two 60 H. P. Craigs.
Please mention MOTOR BOATING.



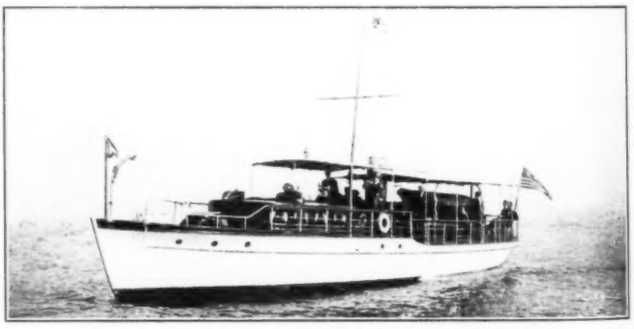
No. 948.—Fast, twin screw, 90 ft. cruiser; Craig engines; recently built from my design. Bargain figure.



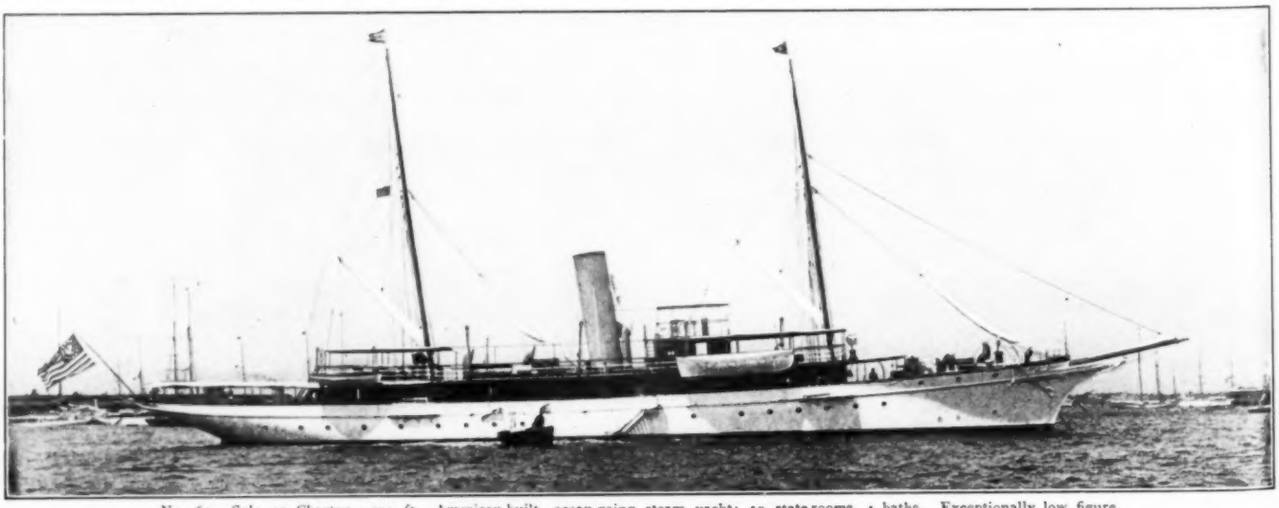
No. 1243.—Fast 90 ft. steel gasolene yacht; two large Standard motors; speed 25 miles.
Please mention MOTOR BOATING.



No. 1770.—Twin-screw, 75 ft. cruiser; latest design; ideal arrangement; excellent motors.



No. 1800.—Attractive 65 ft. trunk cabin cruiser; Standard engine.
Please mention MOTOR BOATING.



No. 63.—Sale or Charter.—200 ft., American-built, ocean-going steam yacht; 10 state rooms, 4 baths. Exceptionally low figure.

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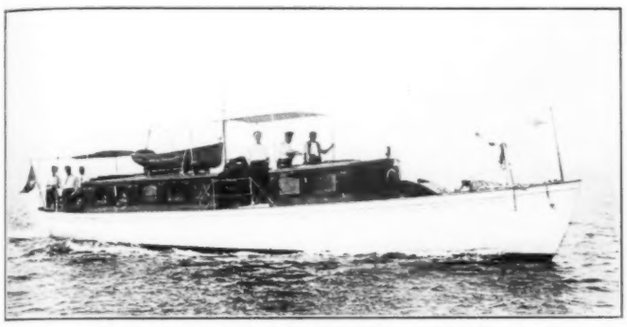
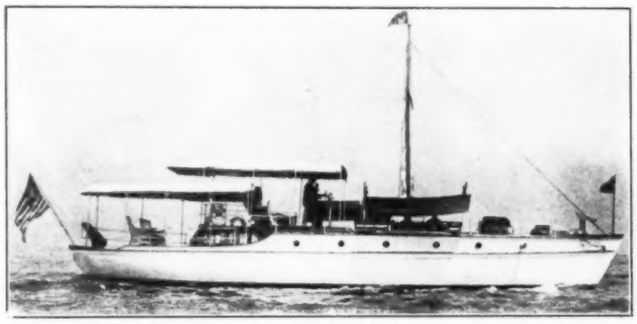
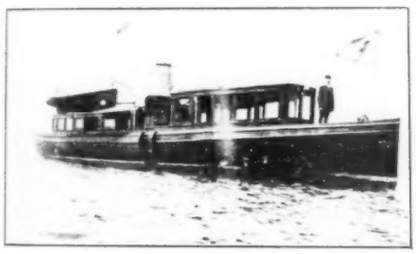


No. 1094.—Able cruiser, 60 ft. Standard motor. Suitable Southern use.
Please mention MOTOR BOATING.

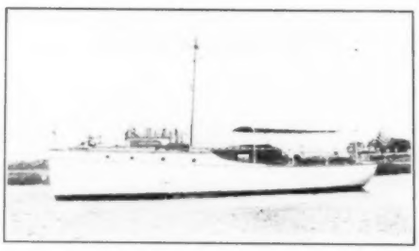


No. 1270.—Raised deck cruiser, 55 x 12. Two S. R., saloon, etc.
Please mention MOTOR BOATING.



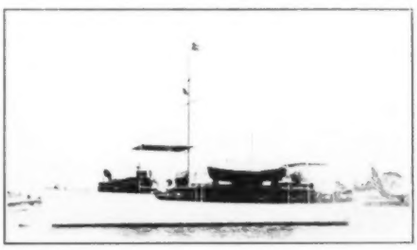
No. 1304.—Cabin launch, twin screw, 54 x 12.6; staunchly built.
Please mention MOTOR BOATING.

No. 947.—Cruiser, 55 x 10; Standard engine, 50 H. P.
Please mention MOTOR BOATING.

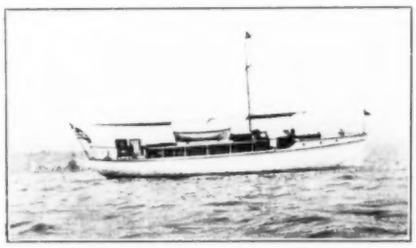


No. 1607.—Popular type, 40 ft. cruiser; Standard engine; best construction.
Please mention MOTOR BOATING.

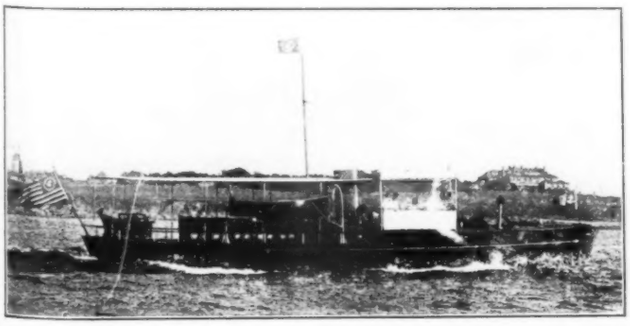
No. 1361.—40 ft. raised deck and trunk cabin cruiser. Excellent accommodation.
Please mention MOTOR BOATING.



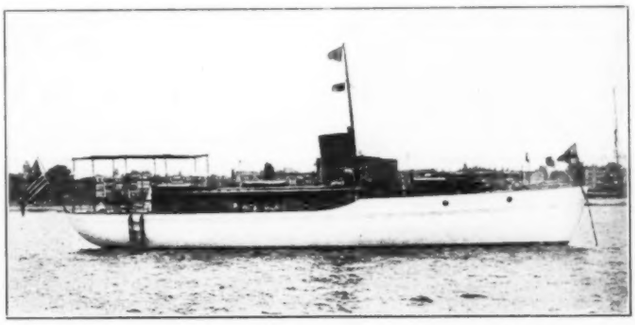
No. 1495.—Modern 45 ft. bridge deck cruiser; Standard motor.
Please mention MOTOR BOATING.



No. 1693.—Bridge deck cruiser, 50 x 11; Century motor.
Please mention MOTOR BOATING.



No. 1216.—Attractive cruiser, 52 feet; 30 H. P. motor; sleeps six persons.
Please mention MOTOR BOATING.



No. 1875.—New cruiser, 52 ft. x 10; Murray & Tregurtha motor.
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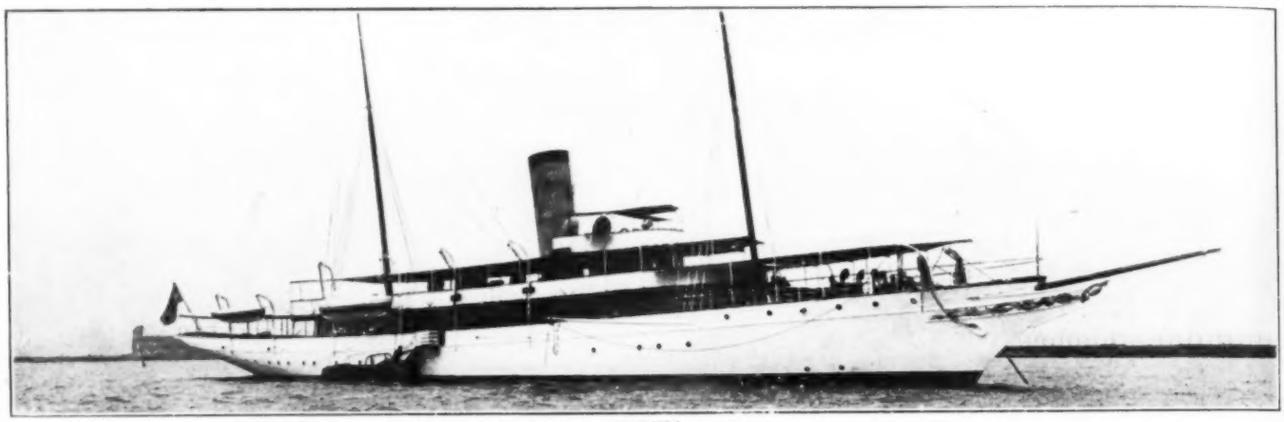
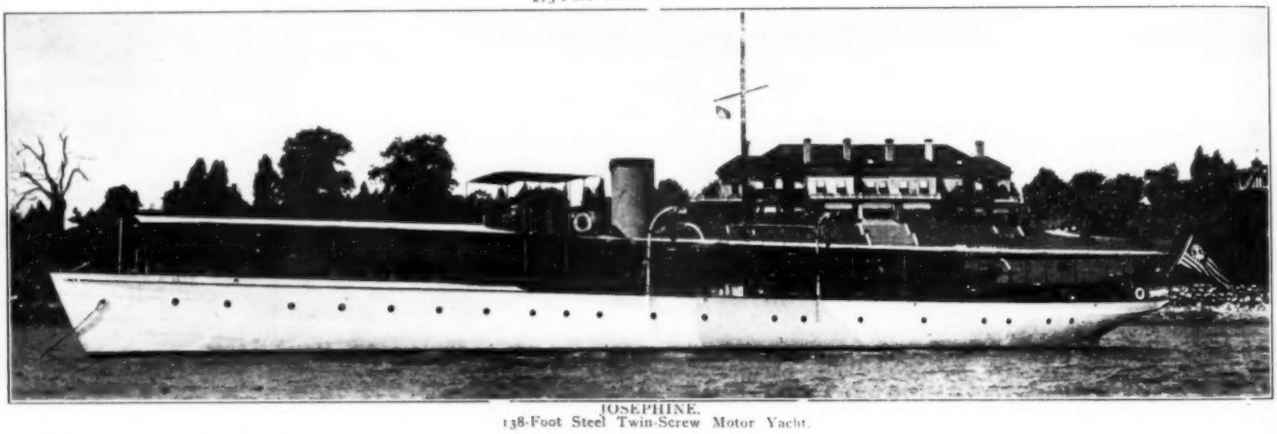


LYDONIA.
213-Foot Steel Steam Yacht.



JOSEPHINE.
138-Foot Steel Twin-Screw Motor Yacht.

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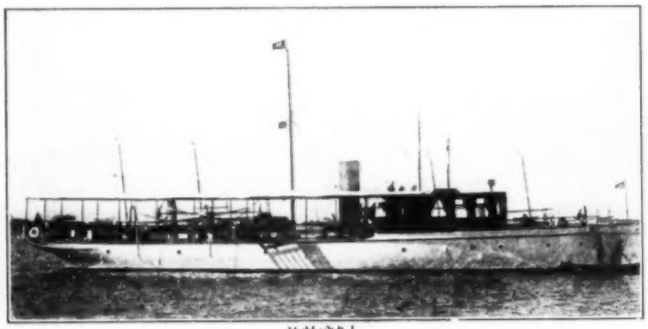
123-Foot Steel Steam Yacht.



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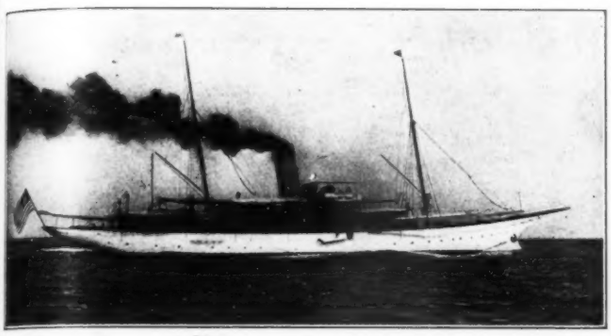

No. 3904.—200 ft. seagoing steam yacht. Accommodations aft. Reasonable price.
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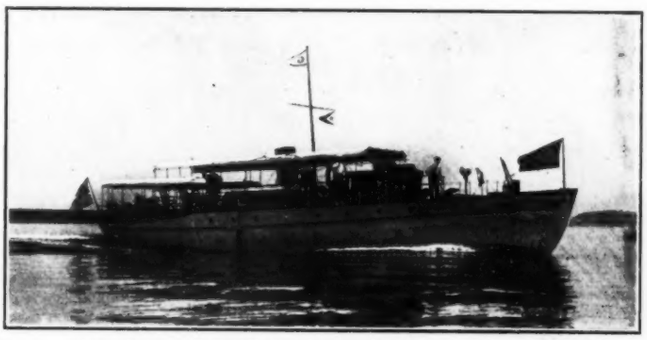
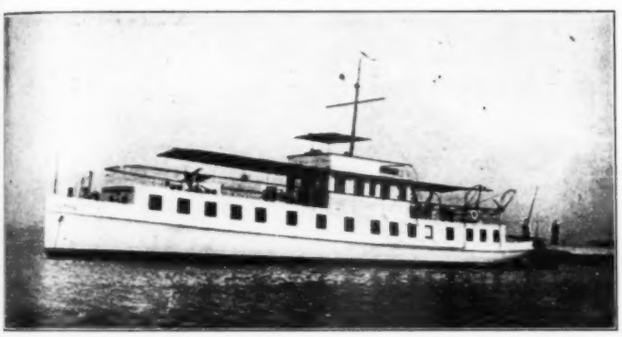


No. 4840.—75 ft. gasoline cruiser, available for Southern charter.
Please mention MOTOR BOATING.



No. 5831.—110 ft. twin-screw gasoline houseboat, speed 10 knots. Charter only.
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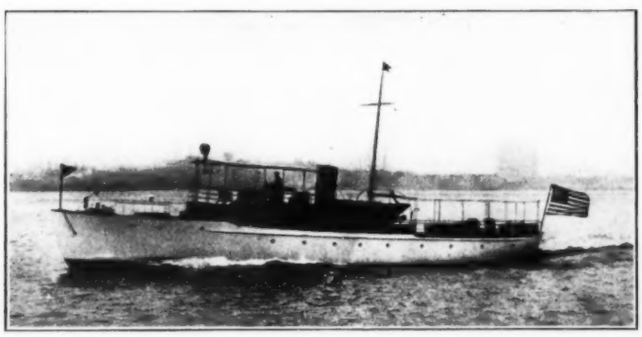
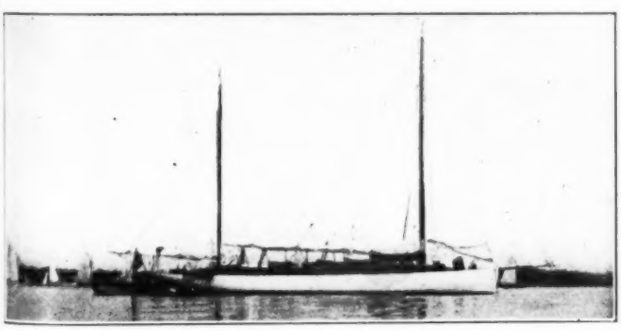
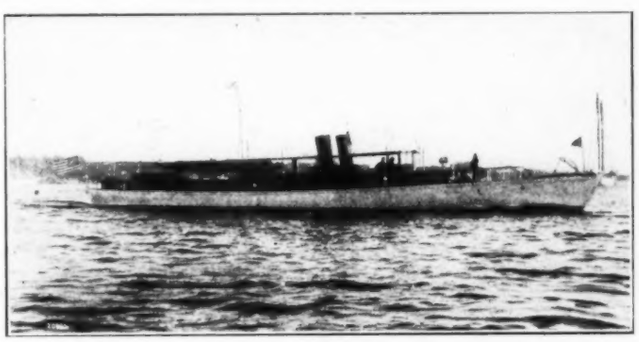


No. 5908.—105 ft. fast gasoline cruiser; twin-screw; Standard motors.
Please mention MOTOR BOATING.



No. 3887.—High powered 85 ft. light draft auxiliary yawl, especially adapted for Florida use.
Please mention MOTOR BOATING.



No. 2210.—110 ft. express steam yacht; one of the fastest yachts of her type.
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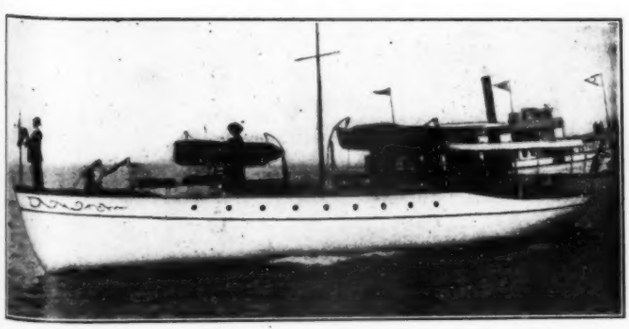
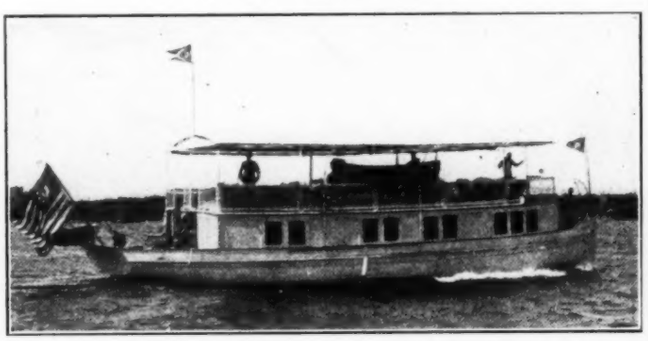


No. 4835.—65 ft. raised deck cruiser, two staterooms and saloon. Good speed.
Please mention MOTOR BOATING.



No. 3284.—65 ft. power houseboat adapted for Florida waters.
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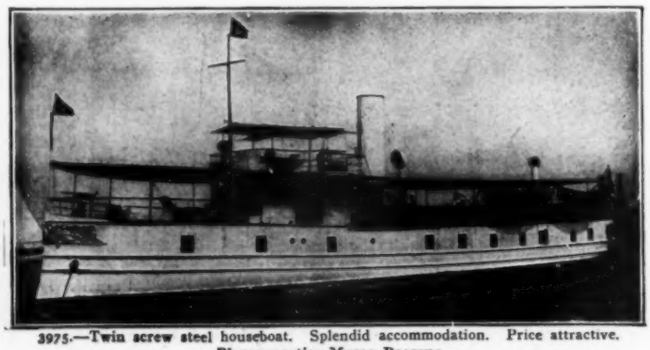
Our list comprises all the available yachts for sale and charter. Below are a few of our offerings. If none of these appeal to you write us your requirements.

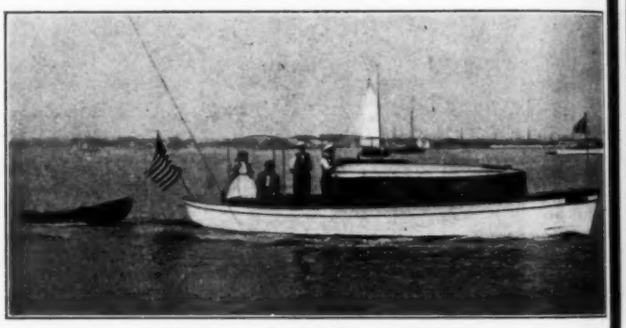
1265.—Now in Florida waters. 50 ft. auxiliary cruiser; 14 ft. 3 in. beam, 2 ft. 6 in. draught; practically new. Double stateroom, saloon with four berths, mahogany finish. Speed 10 miles. Owned by Estate, anxious to close out.

827.—75 ft. gasoline cruiser; three staterooms, saloon, etc. Speed 12 miles. Price attractive.

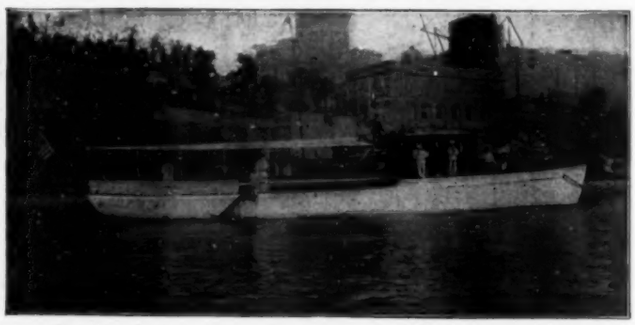


3975.—Twin screw steel houseboat. Splendid accommodation. Price attractive.

Please mention MOTOR BOATING.



992.—33 ft. cruiser. Price attractive.



1028.—Sale at a low figure. 80 ft. gasoline cruiser. Two staterooms, saloon. Speed 15 miles.

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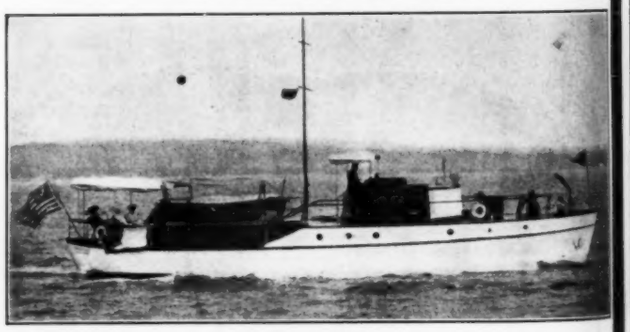
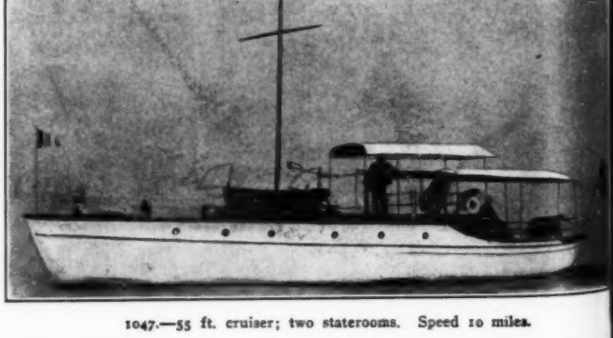


1137.—Twin-screw, 60 ft. Three staterooms, dining and main saloons. Speed 12 miles.

In the October number of this magazine, we advertised the yacht Esperanza for sale. We did this under a mistake. This yacht is not for sale and never has been offered for sale by the present owner, to the best of our knowledge.

JENNINGS YACHT BROKERAGE CO.



1047.—55 ft. cruiser; two staterooms. Speed 10 miles.

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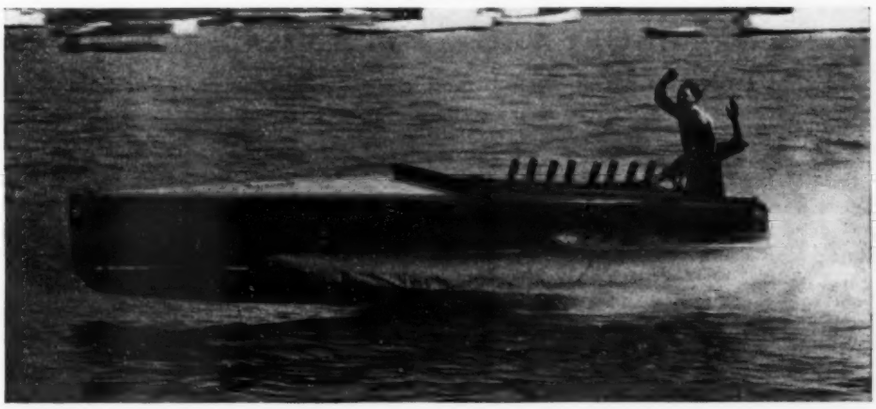

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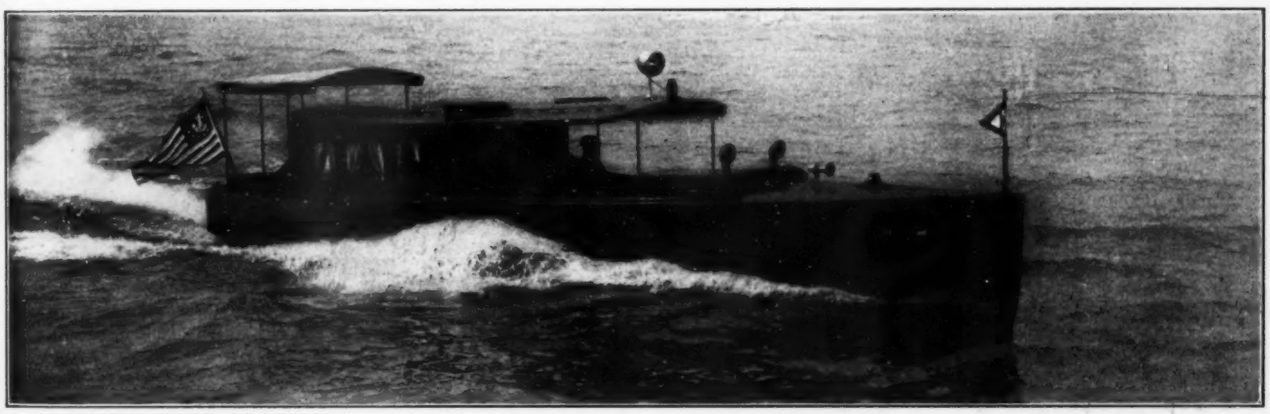

For Sale—Peter Pan, Sr. A day cruiser.

40 ft. x 7 ft. 9 in.; magnificent mahogany; twin screw; 100 H. P.; two 50 H. P. Reliance-Continental motors; one-man control; every kind of appointment; cabinet for wines, silver, glasses, etc.; enclosed toilet room and lavatory; running water; Pullman berth; electrically lighted throughout; splendid sea boat. Speed, 20 miles. Has had practically no service and equal to brand new in every respect. Winner National Championship, also Long Distance Race, New York to Peekskill and return.

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No. 77.—New auto speed runabout, 21 x 4 ft. 6 in.; speed 18 miles; 20 H. P. Reliance motor; very high class; carries six; all appointments. $900. A bargain.

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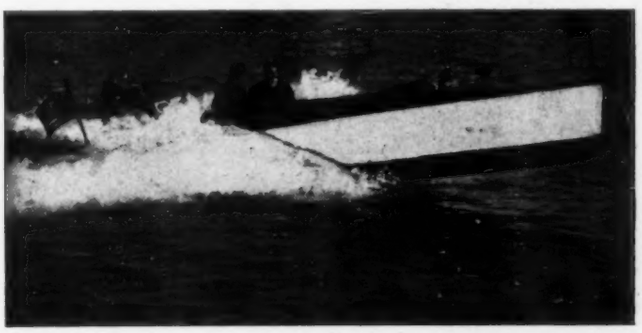

No. 88.—Magnificent auto runabout; 25 ft.; brand new 40 H. P. Reliance-Continental motor; carries six; fully equipped; speed 24 miles; bargain.

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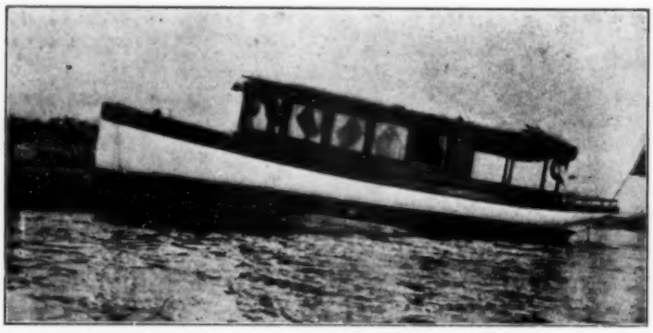
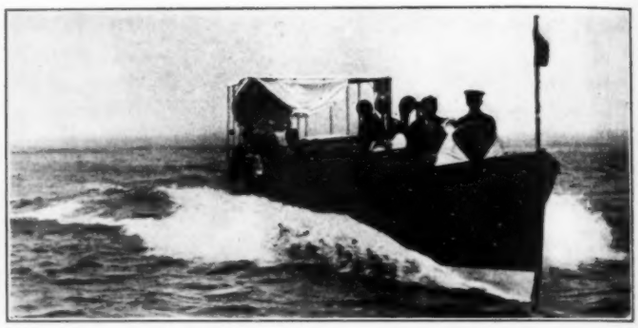
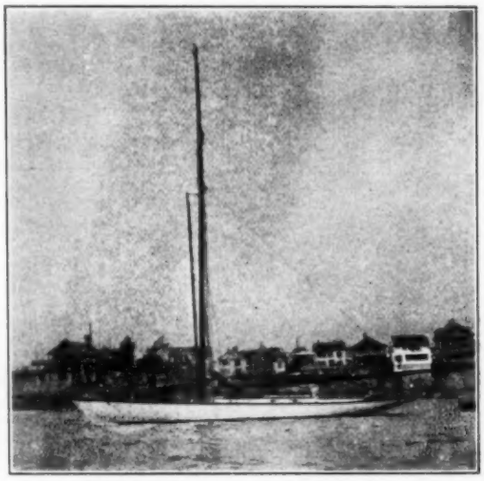


No. 1049.—36 x 6½ x 3½; same type as picture but much handsomer.

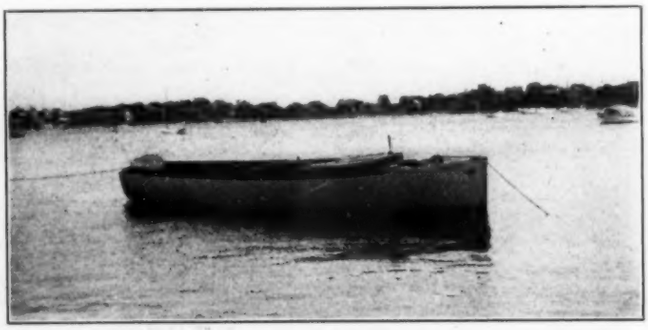


No. 1176.—45 x 7.9 x 2.3, mahogany throughout, speed 22 miles. Designed and built by Stearns & McKay Co.

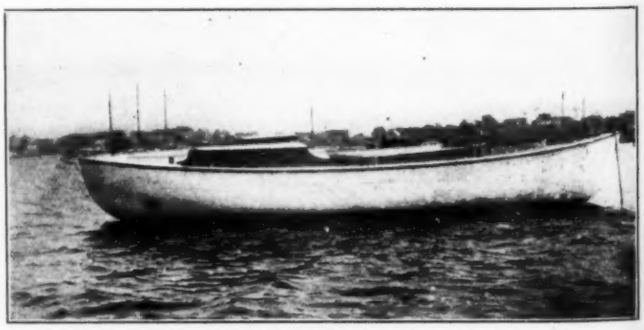
No. 1836.—Auxiliary schooner, 88 x 62 x 18.4 x 8.6; 5 staterooms; 50 H. P. motor.



No. 1438.—62 x 41 x 12.2 x 9; 2 staterooms.



No. 1830.—23 ft. launch, mahogany and cedar; 5 H. P. motor.



No. 1348.—25 x 30 launch, plain or mahogany finish.

Nos. 1583-1672-1751-1067.—21 ft. cabin knockabouts; $100-$600.
No. 1798.—Cruising yawl, 42 x 32 x 10 x 7.4; $1,500.

No. 1347.—Cruising sloop, 41.6 x 26 x 10.6 ..... $1,200
No. 1532.—21 ft. launch 250
No. 1583.—17 ft. fast runabout 500
No. 1567.—18 ft. cabin knockabout 300

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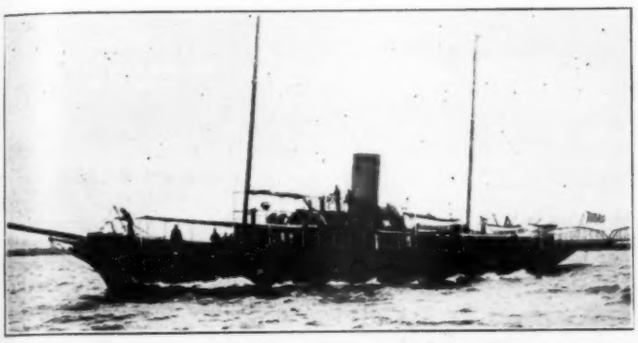
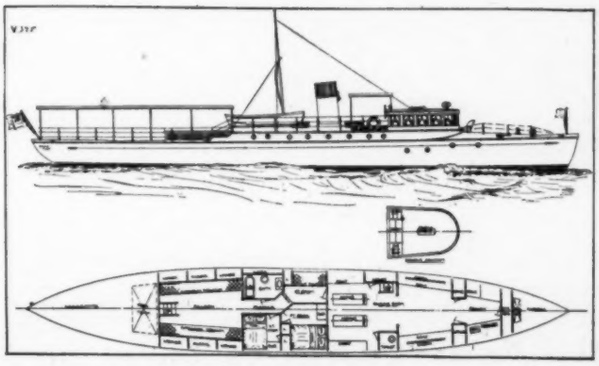
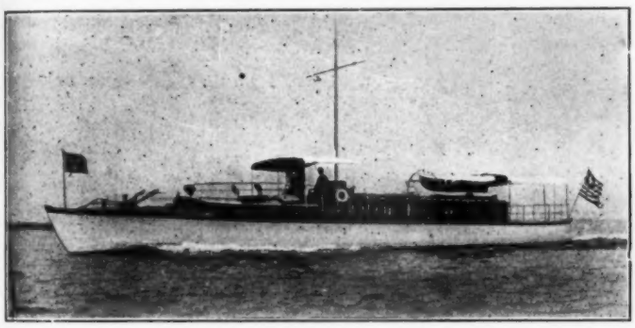


No. 3510.—Steam yacht, 189 ft. x 22 ft. x 9 ft. Best of condition throughout. Speed 17 to 20 miles per hour; excellent accommodations. Price very reasonable.



No. 2813.—Very desirable speedy motor yacht; 92 ft. x 12 ft.; twin-screw; Sterling motor; in commission.

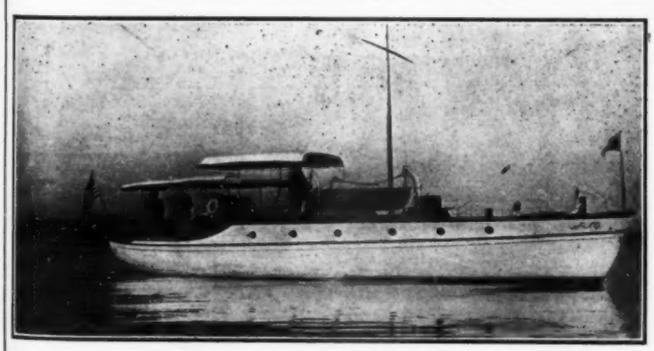
Please mention MOTOR BOATING.



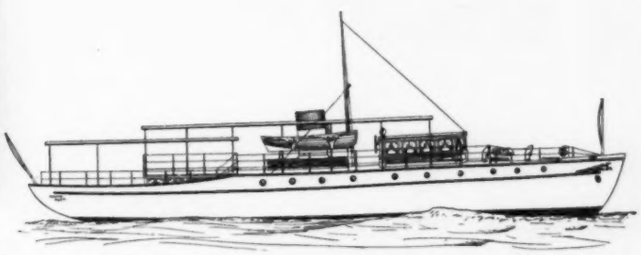
No. 2809.—For Sale or Charter.—Motor cruiser; 75 ft. x 14 ft. x 4 ft.; Standard motors; three state rooms; electric light. In commission.

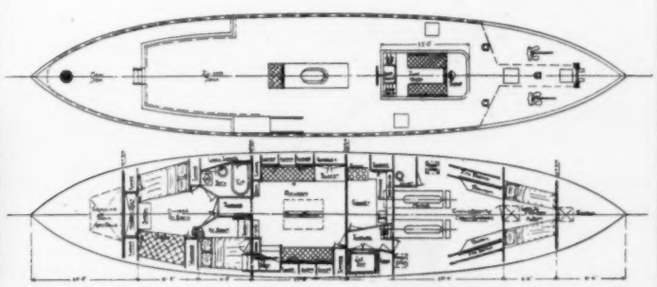
No. 2841.—Sale or Charter.—Motor cruiser; 75 ft. x 18 ft. x 3 ft.; twin-screw; electric light; four staterooms; in commission.

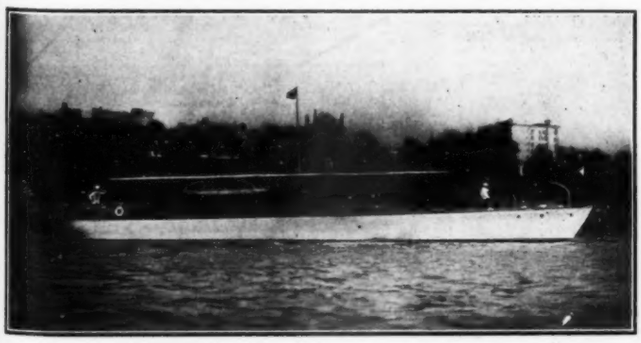
Please mention MOTOR BOATING.



No. 2596.—For Sale.—Price low to immediate purchaser; 55 ft. x 11 ft.; double stateroom, suite 6; Standard motor.







No. 2776.—High speed motor yacht; sale; 92 ft. x 12 ft.; speed 16 to 18 miles per hour; electric light; first class condition.

No. 2804.—Charter for winter.—Motor cruiser; 75 ft. x 15 ft.; electric light; suitable for Southern cruising; in commission.

Please mention MOTOR BOATING.

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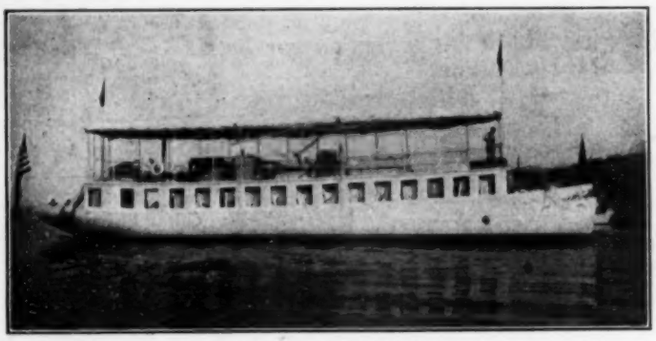
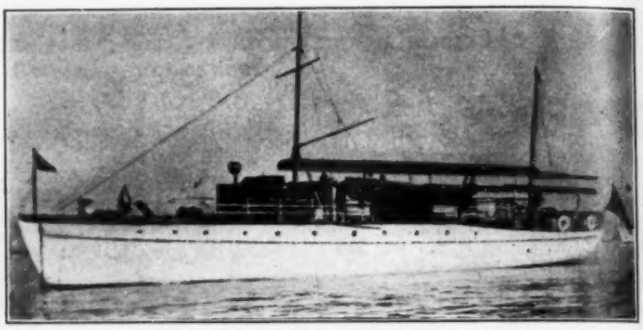
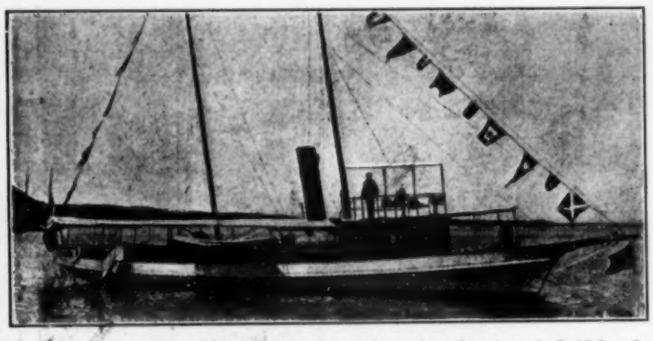


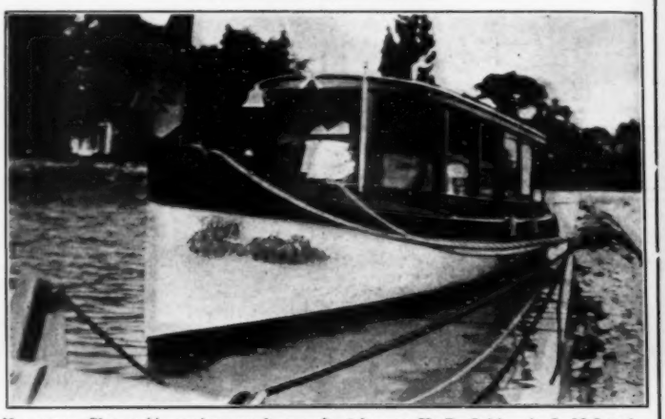
No. 6699.—70 ft. roomy house boat with 60 H. P. Craig engine. A. J. McIntosh Yacht Agency, 32 Broadway, New York.
Please mention MOTOR BOATING.



No. 1135.—75 ft. raised deck cruiser, built 1911; 2 60 H. P. Craig engines. A. J. McIntosh Yacht Agency, 32 Broadway, New York.
Please mention MOTOR BOATING.



No. 1177.—80 ft. steam yacht, triple expansion engine at bargain price. A. J. McIntosh Yacht Agency, 32 Broadway, New York.
Please mention MOTOR BOATING.

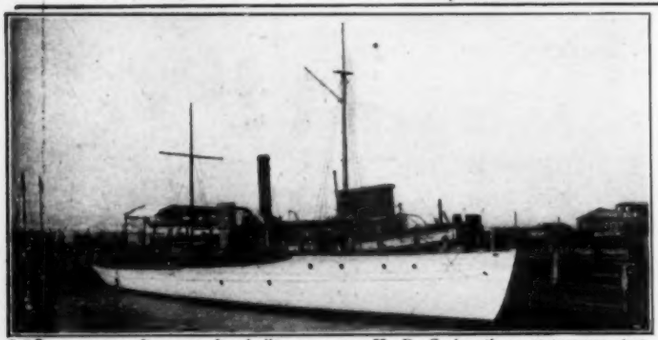


No. 1075.—Glass cabin cruiser, 32 ft. x 7 ft. 6 in.; 25 H. P. Gaith. A. J. McIntosh Yacht Agency, 32 Broadway, New York.
Please mention MOTOR BOATING.

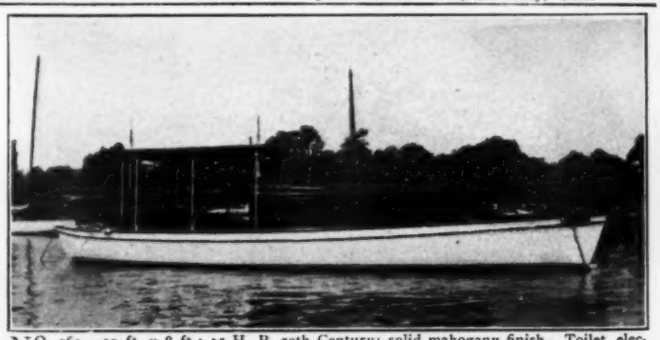
I HAVE secured the unsold 1912 product of prominent marine engine company; can therefore sell the few remaining at prices that are right. Full factory guarantee. Four cylinder, four cycle 60 horse, medium duty; single cylinder, four cycle, 6 horse, medium duty; also 1911 four cylinder, 40 horse Trelert, 5" x 5"; one 1911 Vim, 3 cylinder, two cycle. An exceptional high-grade 75 horse, four cylinder, four cycle, racing engine, built by best shop in the country. Duplicates in famous boats. Exceptional, c/o Motor Boating.

GENUINE BARGAIN—Two Palmer motors, right and left hand, four cylinder, four cycle, 20 H. P. each, heavy duty, complete equipment except propeller shaft. Will sell separate or together, price $125.00 each. One four cylinder, two cycle, 16 H. P. complete equipment (Roper propeller), price $100.00. One two cylinder, two cycle, 10 H. P. Fulton, new motor with ignition system, carburetor and propeller wheel, price $200.00. One 18 ft. x 4 ft. 10 in. launch, 3 H. P. Ferro, and reverse gear, first class condition, price $150.00. G. R. Richardson, North Tonawanda, N. Y.

SPECIAL BARGAINS.
We have a number of brand new fully guaranteed 1912 models over and above our manufacturing schedule for this season. These will be disposed of at unusually attractive prices. Write at once for particulars as the supply is limited. We also have a few foreign makes accepted in trades. These motors have been carefully overhauled and are in first class running order.
3 cylinder, 4 x 4¼, 12-15 H. P. Barber $150.00
4 cylinder, 3½ x 5, 12-16 H. P. Sterling 178.00
THE ROBERTS MOTOR CO.
1501 Columbus Ave., Sandusky, Ohio.



NO. 343.—100 ft. x 17 ft.; built 1909; 150 H. P. Craig; three staterooms, two saloons, bath, large galley, launch and yawl. Offered at less than ½ cost. Unusual bargain. G. W. Ford Yacht Agency, Davenport Neck, New Rochelle, N. Y. Phone 1325. All type yachts listed.



NO. 260.—37 ft. x 8 ft.; 15 H. P. 20th Century; solid mahogany finish. Toilet, electric light; tender, etc. Genuine bargain at $1,500. Cost $3,500. Demonstration in New Rochelle. G. W. Ford Yacht Agency, Davenport Neck, New Rochelle, N. Y. Phone 1325. All type yachts listed.

NO. 326.—27 ft. x 7 ft.; built 1910, Copper fastened; new Palmer 4 cycle motor, 12 H. P.; reverse gear, toilet, electric light; sacrifice at $550. Demonstration. G. W. Ford Yacht Agency, Davenport Neck, New Rochelle, N. Y. Phone 1325. All type yachts listed.

EXPERT ADVICE on all marine problems by a corps of experts; propeller and engine troubles a specialty; charges very reasonable. Address Information Bureau, care Motor Boating.

THIRTY-ONE foot raised deck cabin cruiser; new 12 H. P. Sterling engine; brass lights, search light, anchors, toilet, ice box, full equipment, $950. H. J. Knauber, 312 Potomac Ave., Buffalo, N. Y.

FOR SALE CHEAP.
Bridge Deck Cruiser, used only 6 weeks. Complete equipment. Owner building larger boat. Covert Robertson, North Tonawanda, N. Y.

TUTTLE MARINE MOTORS
for Everything from a Canoe to a Cruiser.
20 years' experience—Unlimited Guarantee.
Write for Catalog.
TUTTLE MOTOR CO., 612 State St., Canastota, N. Y.

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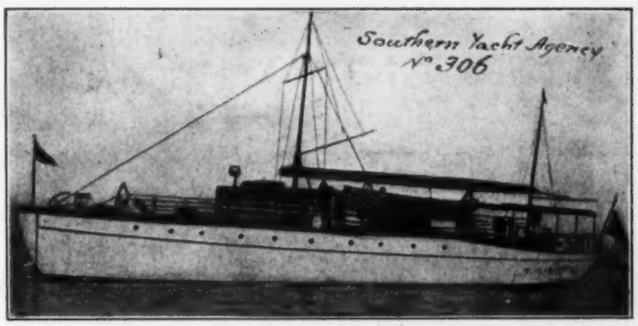
No. 309.—Will be sold at a great sacrifice. The owners have decided to dissolve partnership.

Keel Cruising Auxiliary Yawl.—47 x 30 x 12.6 x 4.6; 15 H. P. motor. Handsome, Fast, able; A-1 condition.



No. 306.—Seventy-five feet overall. Built 1911. Very handsome. Perfect condition. This and other high class yachts for sale at attractive prices.

SOUTHERN YACHT AGENCY, 1108-a AMERICAN BLDG., BALTIMORE, MD.

NAVAL ARCHITECTURE.—Wanted.—Several more boatbuilders, owners, draughtsmen or amateurs to join class of instruction in marine draughting and naval architecture. Instruction, by mail or in my draughting room, covers marine draughting, naval architecture, designing, construction. Moderate terms. Particulars upon request. Chas. Desmond, Naval Architect, Elizabeth, N. J.

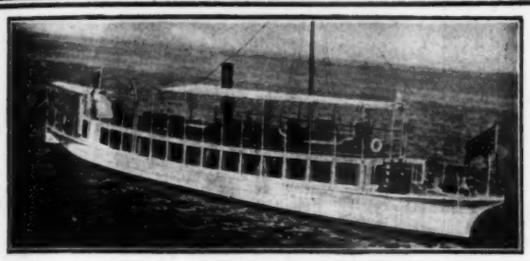
We have for

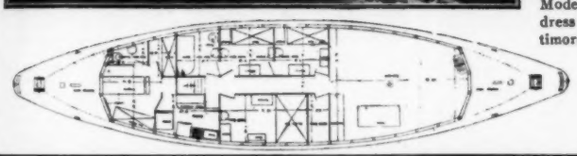
CHARTER

for Southern waters

Some very desirable yachts—sail, auxiliary, motor and steam.

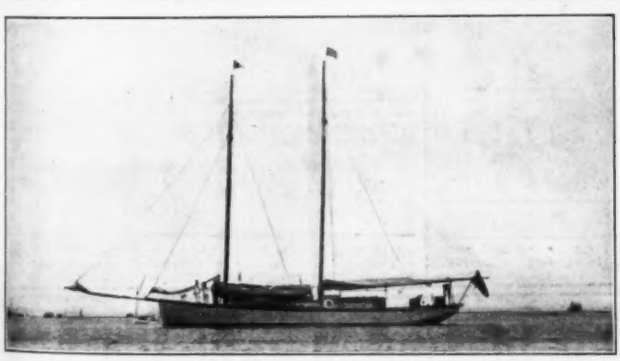
SOUTHERN YACHT AGENCY,
1108-A American Building : : : Baltimore





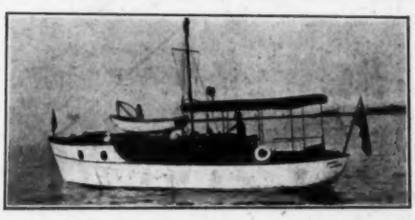
FOR CHARTER—
CRUISING HOUSEBOAT

Through winter months now in Chesapeake Bay. Is admirably adapted for Southern waters—80 feet long x 18 feet beam with all the conveniences of a city apartment—running water and acetylene gas in all staterooms—large saloon and promenade under awnings. This boat can be run with two men at low cost, and has far more accommodations and comfort than a yacht twice the size. Moderate rental to responsible party. Address Mr. J., 507 W. Lombard St., Baltimore, Md.



NO. 3429.—For Sale.—Shoal-draught auxiliary schooner yacht "Manetto," Gielow design. 64 ft. 3 in. o.a., 16 ft. 9 in. beam, 3 ft. draught; good freeboard; main cabin is 13 ft. in length, fitted with 12-ft. transoms on each side; also large stateroom, giving sleeping accommodations for six to eight in owner's party; bathroom, toilet, etc., interior finished in mahogany and white. A 30 H. P. motor gives the yacht a speed of 8 miles. Completely equipped, including two launches and dinghy. The yacht has proved to be very seaworthy, having been thoroughly tested out in rough weather. Built for Southern waters. Plans and full particulars from Gielow & Orr, 52 Broadway, New York City.

GASOLINE ENGINES. Ten sizes, from 20 H. P. to 60 H. P. Two, three and four cylinders. $100 up. New and guaranteed. Universal joints, $4. Safety rear starters, $8.50. Bill Ferguson, 422 Commercial Street, Waterloo, Iowa.



NO. 2001.—For Sale.—36 ft. 1910 Racine cruiser. Equipped with 4 cylinder 4 cycle Loew-Victor motor, installed 1911. Speed 10 miles. Electric lights. Good sleeping accommodation, toilet, galley. Interior finish of white enamel. In excellent condition; very seaworthy. Complete inventory, including 9 ft. dinghy. Cox & Stevens, 15 William St., New York.

NO. 2000. For sale at low figure. Able and roomy raised deck cruiser, now in southern waters, 45 x 10 x 3 ft. 6 in. draft. Built in 1908; designed by Whitaker. 30 H. P. motor; speed 10 miles. Accommodates six. Electric and acetylene lights, toilet, galley, etc. Complete equipment. Cox & Stevens, 15 William St., New York.

BEARINGS
Ball and Roller—All Types
For American and Foreign Cars
and Motor Boats
Distributor of
"F. & S." "B. A. F." New Departure
Standard (S.R.B.)
Other Makes in Stock
Vixen Files
THE GWILLIAM COMPANY
Broadway and 58th St.
New York.

FOR SALE—A BARGAIN.

A PRACTICALLY new 30 to 35 H. P. kerosene engine with Bosch magneto. Suitable for high speed motor boat. This engine was built by a first-class manufacturer for a special purpose but was never put to practical use. It can be seen by appointment. Wm. Gardam & Son, Inc., 86 Park Place, New York.

FOR EXCHANGE.

WANTED.—Yawl rigged auxiliary yacht or cabin cruising launch or high speed Elco launch in exchange for six cylinder Pierce-Arrow automobile, value $2,500. This car is in prime condition and now in daily use in my family. Address T. A. Phillips, Room 1603, 784 Broad St., Newark, N. J. Telephone 5525 Market.

WANTED—Two used engines; one 3 or 4 H. P., one 20 to 30 H. P., with all equipment for salt water. J. M. Welch, 609 S. 18th St., Omaha, Neb.

SPORTSMEN WANTED.

Good duck, goose, swan, quail, English snipe shooting. Jasper B. White, Waterlily, North Carolina. (Currituck Sound). Very convenient for yachtsmen on the way to Florida. Engage rooms now.

BROKEN PARTS WELDED EXPERTLY AND GUARANTEED.

Why risk sending your broken cylinders and crank-cases to inexperienced and irresponsible welders when you can get expert workmanship, prompt service, and fair prices from an old and responsible firm? Write us for estimates and look up our references. What good is a guarantee unless the firm behind it is reputable and responsible? We refer to Dun, Bradstreet, or any Waterbury bank. WATERBURY WELDING COMPANY, WATERBURY, CONN.

ENGINEER-CAPTAIN.—Young man (American) is open to engagement. Experienced on Hall, Standard and 20th Century motors; General electric generators. References. W. S. Cassaday, 1915 N. 13th St., Philadelphia, Pa.

WANTED—Old discarded boat, 50 to 100 feet long; no power wanted, but good cabins. Box 2, Motor Boating.

FOR SALE OR CHARTER—Two Cruisers; one forty by ten by three, hunting cabin, Hall engine; other thirty-six by nine, raised deck, Palmer engine. J. C. Gould, care Jacksonville Yacht Yard, foot Laura Street, Jacksonville, Fla.

"PATENT ATTORNEYS"—$10.00 each for the names and addresses of persons interested in patents. For particulars address Post Office Box 2343, Washington, D. C.

CYLINDERS REBORED—Pistons and rings fitted, new cranks, connecting rods, cases, transmissions, any part for automobile or motor boat motor reproduced like original. Gear cutting of all kinds and materials. Send old part. The shop of quality. McCadden Machine Works, Minneapolis, Minn.

NEW 54 H. P. six-cylinder Elbridge engine, just from factory. Aluminum manifolds, base and cylinder heads, extra finish throughout. Built for Mr. Coleman du Pont of Wilmington, Del.; exchanged for a larger power. Price $700. Emerson Engine Co., Alexandria, Va.

WELDING.

Cracked Cylinders and all Broken Castings in any Metal SECURELY Welded and GUARANTEED at about one-half the cost of a new part. NATIONAL Welding & Mfg. Co., Incorporated, 527 Jackson Boulvd, Chicago, Ill.

CANADIANS, Second-hand engine bargains. Send for list. Guarantee Motor Company, 73 Bay Street, North, Hamilton, Ont., Canada.

USE "SNAPPER" ENGINES for your small boats. They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.

SCORED cylinders repaired, $12. No enlargement of bore—no need for new pistons and rings. Send piston with cylinder. Absolutely reliable method. References, testimonials and full details on request. Waterbury Welding Company, Waterbury, Conn.

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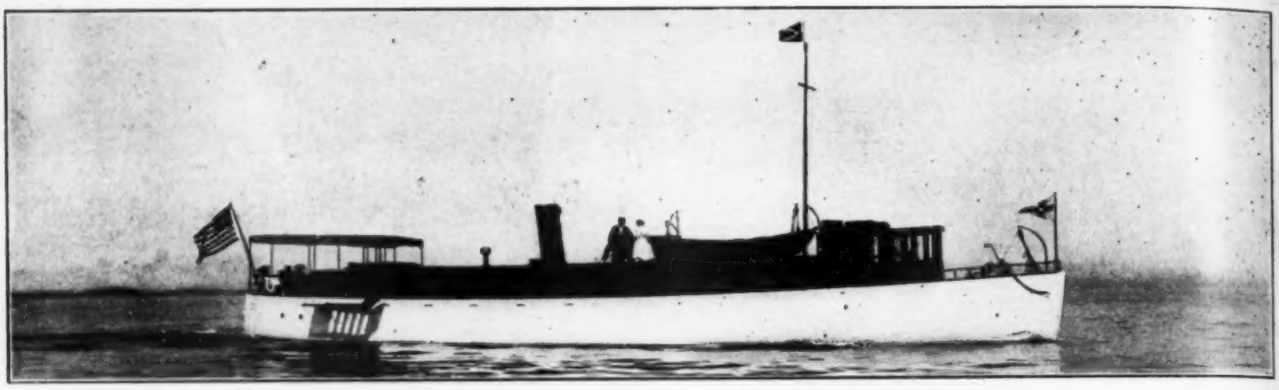
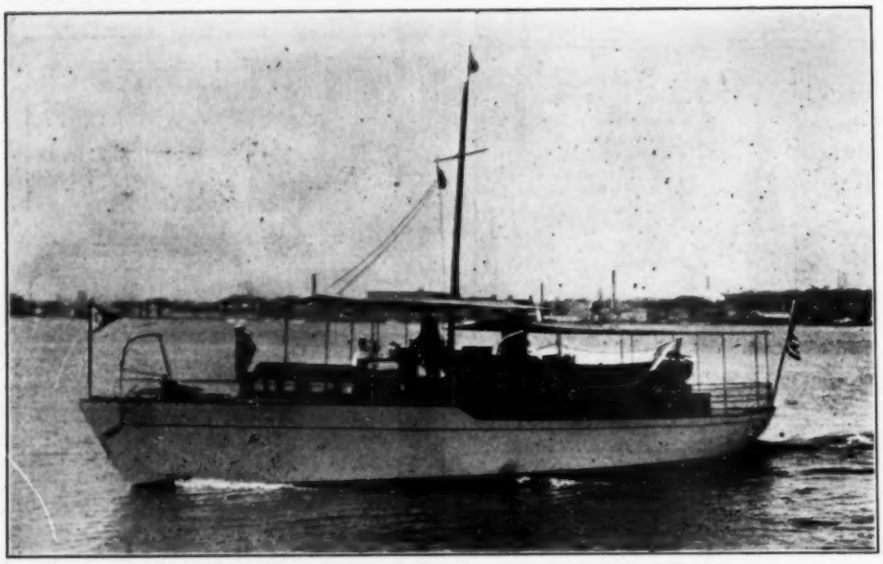


FOR SALE.—90-foot cruising motor boat. Able to go anywhere in any weather. Very heavily constructed and a splendid sea boat. Sixteen ft. beam, 4 ft. 7 in. draft. Two Murray and Tregurtha motors of 60 H. P. each. Speed 10 knots an hour. Palatial cabin with 7 ft. 6 in. headroom. Four staterooms. Carries three boats, one a power tender. This is one of the best large motor boats ever built, powerful, comfortable and well built. Can be bought at a low figure as owner is going abroad. Inspectable near Boston. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



FOR SALE.—One of the finest power boats ever built. An ideal cruiser, roomy, seaworthy and unusually well equipped. 61 feet 8 inches overall, 56 feet waterline, 13 feet beam, 3 feet 6 inches draft. Very large cabin and roomy stateroom, finished throughout in mahogany; 8 berths, two toilets and complete inventory. Equipped with two Knox 4 cylinder motors of 40 H. P. each, driving her at a speed of 11 knots an hour. Electric lighting plant. Two boats on davits, one a motor tender. An ideal boat for cruising in Southern waters on account of her moderate draft. Can be seen near Boston, by applying to Hollis Burgess Yacht Agency, 15 Exchange St., Boston, Mass.

AUTOMOBILES.

AUTOMOBILE, Marine, Motorcycle Cylinders reground, new pistons and rings fitted. Makes engine equal to new. Write for particulars. Cast Iron Brazing Co., Manchester, N. H.

LAUNCH, 48 x 12 ft. Glass cabin. 24 H. P. engine. Good for cruising. H. A. Perkins, Daytona, Fla.

10,000 Ferrets for sale. Write for price list and catalog, it's free. DeKleine Bros., Jamestown, Michigan. Box 23.

Built 1911. 40 x 10. Speed 10½ miles sure all day. 24 h.p. Loew Victor Engine, which has never failed a minute since installed. Consumes two gallons per hour. One man control. Sleeps six in best beds. 25 for day trips. Complete cruising and day equipment. Alcohol stove. 10 electric lights. 135 gallons gasoline. 60 gallons water. Everything in perfect condition. In private use daily. Fastest, safest and best cruiser of size in South. Building larger boat same model and engine. Price, $2,500. Porcher L'Engle, Jacksonville, Fla.

BEST STEEL HULL LAUNCHES.
We build the best zig-zag double riveted steel hulls on the river. Our own original model 30 ft. 16 gauge steel hull pleasure launch is simply a beauty. Finished in hard oiled oak with four cylinder 35 H. P. Northway engine with latest Remy magneto, easily makes 12 miles against and 20 miles with current per hour on Mississippi River. Price complete, without top, $500.00. Other sizes, too.
ROSEDALE MACHINE & SUPPLY CO.,
Rosedale, Miss.

FOR SALE.
Boat and engine works, with full line of machinery and equipment in excellent condition; for manufacture of boats and gasoline engines; buildings in first-class order; size nearly one hundred feet square, two stories, possessing excellent water-front on St. Lawrence River in vicinity of Thousand Islands.
Also complete patterns for high grade two-cycle gasoline motors in sizes ranging from 2 to 120 horse power, from one to six cylinders.
A large business has been conducted at this establishment and the reasons for selling are of a private nature.
This property will be offered at a great sacrifice.
Address all communications to Box 25, care of Motor Boating.

FOR SALE, cheap, 40 horse-power Chalmers motor, in perfect condition, can be seen running, motor suitable for boat. Box 10, Motor Boating.

Sell Your Motor Boat or Motor in This Market Place

When a man is looking for a certain article he naturally refers to the place where he will be most likely to find what he wants. Thousands of readers know of the bargains that are always listed in the Motor Boating Market Place, so they look here first.

Successful advertisers follow the same course as those who are looking for something—they place their advertisements where they are most likely to be seen by prospective buyers.

Motor Boating has a guaranteed circulation in excess of 25,000 copies per issue, and every copy is seen by several persons. In this way practically every motor boat enthusiast in the country is reached, as well as the principal foreign markets. In this great audience there are sure to be several prospective customers for every article you want to sell.

We will write your advertisement if you will send full information and tell the amount of space you wish used. Enclose remittance to cover size of advertisement you want, figuring at the rate of 3 cents per word, each insertion.

MAIL YOUR ADVERTISEMENT TODAY

MoToR Boating

J. S. HILDRETH, Adv. Mgr., 381 Fourth Ave., New York

NAVAL ARCHITECTS & YACHT BROKERS

ARTHUR BINNEY
Successor to EDWARD BURGESS
NAVAL ARCHITECT AND YACHT BROKER
Mason Building, 70 Kilby Street, Boston, Mass.
Agent for The Standard Marine Motor, The Commercial Acetylene Co. (Safety Storage System.)
TELEPHONES:
Office, 3708, Main. Residence, 1023-3, Brookline.
YACHT BROKERAGE DEPARTMENT:
Commission on Sales, 5 per Cent. Commission on Charters, 10 per Cent.

BOWES & MOWER
Naval Architects and Engineers
Yacht and Vessel Brokers
Offices, Lafayette Bldg., Chestnut and Fifth Streets
Bell Phone PHILADELPHIA, PA. Cable Bomo

BREESE & BREESE
Designers and Builders
Motor Boats and Gas Engines
HYDROPLANES
38 East 23rd St., New York City

COX & STEVENS
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Telephone 1375 Broad

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By placing an advertisement in
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MARKET PLACE
It costs you only 3c per word

JAMES CRAIG
837-841 Garfield Ave. Jersey City, N. J.
Tel. 2237 Bergen.
DESIGNER AND CONSTRUCTOR OF MARINE GASOLINE ENGINES AND SPECIAL MECHANISMS, SEVEN TO THREE HUNDRED HORSEPOWER

C. W. ESTABROOK
YACHT AND SHIP BROKER
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Naval Architects, Engineers and Brokers
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52 BROADWAY, NEW YORK, N. Y.
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Plans, Specifications and Estimates furnished for all requirements
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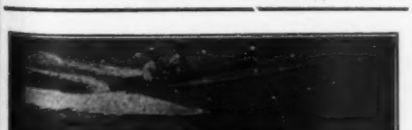

Photo II"—The most successful 21 footer—Speed, Seaworthiness, Comfort and Simplicity. Amateurs can build my original "V" bottom boats. Send stamp for illustrated circular of designs.
WILLIAM H. HAND, JR., Naval Architect, New Bedford, Mass.

WILLARD H. JEROLAMON
DESIGNER AND BUILDER OF
LAUNCHES, KNOCKABOUTS,
Sail Boats, Sea Bright Dories, and Ocean Pound Fishing Boats
GASOLINE ENGINES INSTALLED. BOATS STORED.
GALILEE, N. J.
Telephone Connection. P. O.: Station A, Long Branch.
Estab. 1880.

Yard and Shop.

(*Continued from page 50*)

very moderate price. The compressor, which has been on the market for some time, consists of a well-made double cylinder pump with either friction, belt, or sprocket drive, it is simple to connect up, actuated by a small lever, has a capacity of 3,000 cubic inches of free air, and needs only one-tenth h.p. to operate. The working parts run in oil and the bearings are extra large and of phosphor bronze. The Gilco triple chime whistle is made specially for the Dirigo outfit. It will operate successfully on less than one pound of air pressure.

Anderson Co.'s New Address.

The Anderson Engine Co. have removed from their North Fifth Avenue address to more central, larger, and in every way better quarters at 140 South Dearborn Street, Chicago, Ill.

Shipmate Stoves.

WHATEVER may be the explanation, it is still true that we enjoy sitting before a fireplace in which logs are burning; and we feel more as if we were really having cooking done if we see the food on a real range. To express it differently, there is something suggestive of home comfort about a coal or wood stove.

Especially is this true of a galley. A galley without a stove in it does not seem like a galley. On the other hand, if there were nothing in the galley of a small motor boat besides a No. 1 Shipmate range, a person would feel that he was on shipboard, so thoroughly salt and nautical is it in its appearance and behavior.

The same is true of all of the larger sizes of Shipmate ranges. But the strong hold which Shipmates have upon men who love the water does not depend upon appearances alone. The constant reliability of a Shipmate is of itself enough to account for its popularity among yachtsmen. No matter what the weather conditions are; no matter whether there is a heavy sea or smooth water, the Shipmate does its work.

Pleasure boating without any rough weather would be tame sport, and every sportsman ex-

Shipmates are made in all sizes. This is the No. 1.

pects to experience more or less discomfort; but he will enjoy that discomfort much more if he feels sure that when it comes meal time he will be able to cook his food properly and warm himself and dry his clothes, than if he is likely to have to eat cold canned stuff, and sit and shiver while he does it.

A Shipmate, even the smallest, is a complete cooking apparatus. Baking, boiling, frying, broiling, roasting, can all be done upon or in it; and no matter how content one may be to live on hardtack and canned corn beef and coffee most of the time, he will be glad to vary such a diet once in a while with some real cooked food; and then he will appreciate the reserve powers of his Shipmate.

No danger accompanies the use of a Shipmate. The fuel it requires can be left anywhere and exposed to any conditions with perfect safety.

The New Scripps 96-H.P. Extra Heavy Duty Motor.

The Scripps Motor Co., of Detroit, evidence the fact that their manufacturing activities are

(*Continued on page 74*)

NAVAL ARCHITECTS & YACHT BROKERS

KROGMAN & PURDY
Yacht and Ship Brokers
HIGH GRADE YACHTS OF ALL TYPES FOR SALE AND CHARTER
92 State Street, Boston, Mass.
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Yacht Designer and Builder
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H. B. PICKERING & COMPANY
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OF THE
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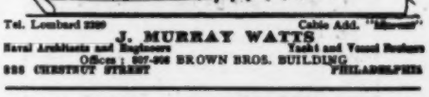
OUR Brokerage Department facilities enable buyers to choose from a most complete list of high grade pleasure and commercial vessels of recent build, at remarkably low prices. We can fill your requirements no matter what they may be.
Repairing - NAVAL ARCHITECTURE - Winter Storage - Insurance

TAMS, LEMOINE & CRANE
Naval Architects and Yacht Brokers
Telephone 4510 John 52 Pine St., N. Y. C.



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J. MURRAY WATTS
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Offices: 807-808 BROWN BROS. BUILDING
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A Specialty of Steam Yachts, Power Boats and Sailing Yachts.
Successor to H. C. WITHINGHAM and WITHINGHAM AND WELLS.

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VALSPAR
"The Varnish That Won't Turn White"
VALENTINE & COMPANY
New York, Chicago, Boston, Toronto, London, Paris, Amsterdam.
W. P. Fuller & Company, San Francisco, Cal.
Sole agents for the Pacific Slope and Hawaiian Islands.

PROTECT YOUR BOAT
from explosions, fires, leaks, motor-cooling troubles and many other dangers by installing the
Aaron Automatic Bilge Pump
Keeps bilge pumped dry all the time. Removes gas as well as liquid. Installed in motor-cooling system. No operating expense. *Write for full information and prices.*
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IS your boat worthy of a name? Then it's worthy of
A HICKOK NAME PLATE
They're the best made and they are not expensive. Write us today giving name of boat.
The Hickok Mfg. Co.
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MARINE SPEEDOMETER
Shows exact speed, from which you can figure distances, tides, currents and locations. Enables you to experiment with different equipments, such as motors, ignition, carburetor adjustment, oils, greases, propellers, etc., until you have your whole boat tuned up to the highest pitch of efficiency.
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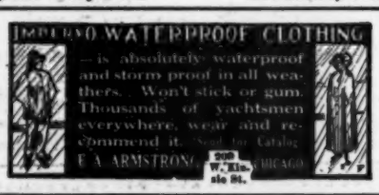
IMPERVO WATERPROOF CLOTHING

—is absolutely waterproof and storm proof in all weathers. Won't stick or gum. Thousands of yachtsmen everywhere, wear and recommend it. Send for Catalog
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Why? *Why?* *Why?*
Why be out of date? Why use out of date paint?
Why scrub off the bottom of your boat?
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Bridgeport Bronze Marine Paint Co.
Cable Address, "Laquero Bridgeport." *Bridgeport, Conn.*

MARINE PAINTS AND SPECIALTIES
Elastic Seam—Compositions; Elastic Flat Yacht White; Elastic Gloss Yacht White; Elastic Special Bright Green Copper Paint; Elastic Special Bright Red Copper Paint and Elastic Bright Green Boottopping. Send for list of firms carrying our goods and for catalogue to
H. B. FRED KUHLS, Sole Manufacturer
Office and Works: 3rd Ave. & 23d St., Brooklyn, N. Y., U. S. A.

Yard and Shop.

(*Continued from page 73*)

far from dormant by the introduction of a new 96 H.P., six cylinder extra heavy duty power plant to their line illustrated on page 50. Following their general design the new motor has separately cast cylinders 7½" bore by 9" stroke, fed through a specially designed inlet pipe from a single carburetor; with two exhausts, serving three cylinders each, on same side. Cylinders are of "L" head type and are made of special close grained gray iron, as are also the pistons; connecting rods are "I" section drop forged steel with bronze bushings, the crankshaft is forged from double heat treated special carbon steel, the crank case is of iron and the lower bearings, which are of Babbitt, are easily adjusted. Valves have C. I. heads and carbon steel stems, roller type push rods, specially cut gears with perfectly generated teeth, regular ignition equipment is Bosch two point, and splash system and mechanical force feed oiler insure efficient lubrication. The motor and exhaust manifold are kept cool by means of a large plunger pump, and the air compressor, which has a capacity of 150 pounds per square inch, is also water cooled. The compressed air type of self starter, made under Chalmers Motor Co. patents, render the motor, despite its large size, very easy to start, a bilge pump is also included in regular equipment. The Scripps Co. are prepared to supply, without extra cost, a kerosene using device should same be required. The first two motors of this type have proved their ability and consistency by driving the boat they powered through the 1912 Great Lakes reliability run without trouble or adjustment, thereby winning a perfect score for the performance. An illustration of the motor will be found on page 50.

The Scripps Co. advise us that they have assigned the entire territory of Alaska to their general northwestern distributor S. V. B. Miller, of 72 Marion Street, Seattle, Wash. Mr. Miller's territory now consists of the states of Washington, Oregon, British Columbia and Alaska.

New Erd Motor Catalog.

We have received an attractive and lucidly descriptive booklet from the Erd Motor Co., of Saginaw, Mich., who specialize on two cycle standard and special featherweight motors of attractive design and undoubted merit. Four cycle, medium speed, heavy duty motors are also made. Particular attention is given to the all important detail of efficient lubrication, cylinders are cast separately from finest gray iron, bearings are of best grade Babbitt, and finish is in every way first class. Accessibility is a leading feature and careful attention is given to every detail however small.

Along the Jersey Coast.

(*Continued from page 40*)

were built for genuine cruising purposes.

Among the speed displacement boats the season has brought out some admirable performers. Among those deserving of special mention are the Metor, Commodore Gibbons, of Cape May; the Intrepid, Warren Sommers, of Atlantic City, and the Venice. The latter boat raced as an open boat, except where there were classes for semi-speed boats. She is the Vanish, owned by Walter Reed, of Atlantic City, last year, but has had new engines installed this season by the new owner, George F. Joly, and made for herself quite a record.

There is one class of boats—that of the family runabout—which is too frequently forgotten in, or overlooked, in the discussion of motor boat building and designing. This boat, commonly entered in the South Jersey Races as the open boat, has, in a manner, been the greatest factor in the pleasures and delights attending the speed contests. It is a case of "my boat can beat yours any day of the week," when talking motor boat in the local club.

BIDDLE MONEL METAL PROPELLERS
Non-Corrodible Stronger than Bronze Shine like Silver
Biddle Propellers are designed by experienced naval architects. Blades are planed absolutely true to pitch. Write for booklet on propellers and hardware.
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The pleasantest and most efficient motor boat, auto and motorcycle signal. Costs absolutely nothing for operation or repairs. Blown by motor exhaust. Cannot clog. Causes no back pressure. Quickly attached.
Write to-day for booklet and prices.
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Kyanize SPAR Finish
Without a doubt the toughest and most durable spar finish made.
Stands Rough Weather
BOSTON VARNISH COMPANY, Everett Station, BOSTON.

MARINE MODELS
PATTERN MAKING, INVENTIONS DEVELOPED, SPECIAL MACHINERY
The H. E. BOUCHER Mfg. Co.
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Gies Reverse Gear
SPECIAL NO. 1
transmits 1½ H. P. per 100 revolutions.....$12.0
MODEL "A"
transmits 2½ H. P. per 100 revolutions.....$24.0
MODEL "B"
transmits 4 H. P. per 100 revolutions.....$42.0
Over 15,000 in Successful Service.
GIES GEAR CO., 49 Fort St. East, Detroit, Mich.

CHASE Leather
Looks and wears like genuine leather at one-third the cost. Unequalled for motor boat upholstery, Mackintosh and rubber cloths for spray hoods, covers, etc.
Samples on request.
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INST Pocket Life Preserver

You can swim instantly. Carried in pocket. Inflates [illegible] feet long. Cannot slip off while in use. Makes ocean and lake bathing perfectly safe. Will keep any [illegible] person afloat for several days. Adds 100% to pleasure of swimming. Mailed postpaid for $1.00. Money back if not satisfactory.
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CONNECTICUT IGNITION
POWERFUL AND UNFAILING
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If you want Good Circulation on your
Automobile, Launch or Motor Boat, use a
LOBEE PUMP
LOBEE PUMP & MACHINERY CO.
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Bulb Shank Mooring Anchor
Your boat can't get away. The bulb shank makes it lie flat, but raises enough to ease off sudden strains. Hook won't ball up with mud. Eye for trip line makes easy to raise at end of season. Write today for our free "Mooring Book."
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We desire to impress upon your mind that we will accept your present engine as part payment for a new one and make you a most liberal allowance. Our leaders are: STERLING, Four Cycle and EAGLE, Two Cycle. None better made. In exchanging your present engine for a new one, no money is required until you receive the new engine; your present engine acting as a deposit on the purchase of the new one at the time the exchange is effected. By placing your order in the fall, it enables us to promise you prompt delivery in the early spring. We have on continuous exhibit, at our showrooms here, over 150 marine engines.

If interested in the purchase of one of our slightly used engines, advise us and we will be very glad to send one of our bargain lists.

If interested in a yacht or launch, advise us your requirements and we will furnish you with complete data.

Our second hand engines are overhauled by our own mechanics and our guarantee is your protection.

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Showrooms:	Demonstrating Warehouse:	Marine Railway & Boat Yards
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offer over 2500 yachts and launches for sale, of every size and description. Hauling out time has now arrived and we consider that the lowest prices of the year now prevail.

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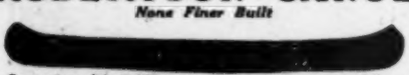

Several models. All sizes. Finest designs, materials and workmanship throughout. I install any make of motor. Motor and War Canoes built to order only. Established in 1881.
Write today for catalog and prices.
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SERVICE, LONG LIFE, RELIABILITY AND ECONOMY. They are distinguished by their original features. The simplicity of the BARBER is its strongest feature and is without a rival for power, equipment and finish. Don't spend your time tinkering with a make-shift. Install a BARBER and forget trouble. We build the size you want. Our catalog tells plain facts—yours for asking.
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"V" BOTTOM EXPRESS
22' 0" x 5' 1½", 30 h. p. Roberts motor, Kenyon auto top, reverse gear, rear starter, etc., $900. 18 m. p. h. guaranteed. 5 other models $225 up.
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Engines for Speed
Only the "power for weight" offered by Elbridge "Featherweight" Engines will enable you to get best results from your light tender, V-bottom, or speed hull. Our catalog will interest you. It's free.
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20 CULVER ROAD ROCHESTER, N. Y.

SPORTSMAN'S FISHING BOAT

15' o.l.-4'-10" beam; draft about 12"; weight about 700 lbs. 3⅜" bore, 3½" stroke. Roper propeller, any speed from backing up to full speed.
CAPE COD POWER DORY CO., 455 Main St., Wareham, Mass.

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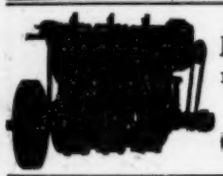
Gasoline Engines—No Coil—No Battrey. A. E. Eldredge, 30 Church St., New York. Kershaw-Williams Co., 93 Haverhill St., Boston. Olsen & Jarvis, The Bourse, Philadelphia. Ed. E. Moore, Ft. of Chester St., Baltimore. Craig Bros., Norfolk. C. C. Stewart, New Bern.



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1, 2 and 3 Cylinders, 3 to 50 H.P
Two port system with springless check valves
ASK US
Goshen Motor Works
Goshen, Ind.

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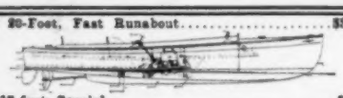
OF THE LEADING
Two and Four Cycle Engines
GASOLENE ENGINE EQUIPMENT COMPANY
133 Liberty Street New York City

RICE 20-Foot, Fast Runabout.....$375.00.



Rice	17-foot	Special	$195.00
"	20 "	"	275.00
"	20 "	Fast Runabout	375.00
"	20 "	Auto Launch	475.00
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RICE BROTHERS COMPANY,
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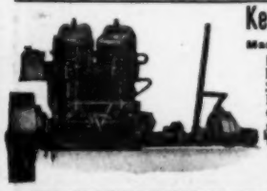

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NO DANGER. Maximum Power. Lightest Weight. Simple, Reliable, Economical. No batteries, Self Ignition by Compression. Fully guaranteed. Write for Catalogue M. B. No charge for packing.
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Let Us Store Your Boat
We specialize on winter storage, both out of the water and in the water, where there is no tide or worms, and will take better care of your boat at lower cost than anyone else. Our location, with its natural facilities and low costs for expert labor, insures finest workmanship on new boats or repair work. Marine railway; machine shop.
Write us for further information.
THE MANN YACHT BUILDING COMPANY
Ferry Bar, Foot of Light Street, BALTIMORE, Md

Accurate Speed Timing.

(*Continued from page 44*)

who gave the finishing signal before will this time give the starting signal and vice versa. Should a boat stop during the run this information will be reported by the one first discovering it and should the boat return for a new start, this fact will not confuse the timers who will be able to keep their records straight.

The times of three trials given in the tables will show how this method of timing the boats works out. In each case all the watches except those with the two highest numbers were at one end, the two highest being at the opposite end of the line, or, in other words, the two highest numbered watches were at the finish of the up stream runs and the start of the down stream runs. Each watch was held by a different timer and several cases will be noted where the watch failed and its reading had to be thrown out. But this error would not have been detected, had the timers been unable to compare the times at each end so readily.

Another fact that will be noticed is that the times of those at the finish are always a trifle less than those at the starting point. This is just as might be expected for those at the start naturally start their watches an instant before the signal could be given to the other end for the timers there to get their watches going, while being dependent upon the signal over the wire to stop their watches, would let them run an instant longer. The average of the times at the two ends cannot be much in error.

After having obtained the times in all of the six runs there are several ways that the average speed might be computed. Take trial No. 2 for example, the average of the total times of all the watches for the six runs is 2 minutes 16 seconds, which is equivalent to a speed of 26.4 knots. Working out the speed of each run separately from the average time for that run and then averaging the speeds of the six runs, we obtain an average speed of 26.86 knots or .46 knot faster than by the first method. Still a third method and the most nearly accurate one is the mean of means. Here the average speed of each two successive runs is computed and then the average of the first averages and so on down, as shown in the table until there is only one resultant average. In this case it is 27.02 knots, which is .62 knot faster than by the first method or nearly a 3 per cent. increase. This last method is the one that should always be followed in trials of this kind.

Trap Shooting at Marine and Field Club.

The Committee of the Marine and Field Club inform us that the trap shooting season commences on November 2nd and continues until April 30th, 1913. Monthly series prizes and also prizes for special events will be competed for, lunch is served on all shooting days, a limited number of guns are available for members who are not already provided, and everything possible is done for the comfort of members.

New Club at Island Heights.

The Island Heights Motorboat Club has recently been formed by a number of New Jersey enthusiasts. The membership is already 75 and is increasing rapidly. A constitution and by-laws have been adopted and the following officers have been elected for the coming year. Commodore, Arthur B. Kiefaber; vice-commodore, Edwin Edwards, Jr.; rear commodore, Augustus Wood; secretary, J. Howard Pile; treasurer, George McKaig.

Dinner to Sir Thomas Lipton.

In recognition of Sir Thomas Lipton's great interest in motor boating and his gift of a valuable cup for the Vikings in next year's Block Island Race, a dinner will be tendered him by the yachtsmen of New York City during his present visit to this country. The dinner will be held at the New York Athletic Club about November 9th, and a general invitation is extended to the yachtsmen of the country to be present and honor this great visiting yachtsman. Applications for tickets should be made to the Yachting Committee, New York Athletic Club, New York City.

THE HETTINGER 6-H.P.
The Ideal Small Marine Engine
Sturdy, powerful and so simple in design that engine troubles cease to trouble you. Send for booklet B, explaining why the elimination of small working parts enables us to produce an engine which cuts out repair bills and cuts down the first cost.
HETTINGER ENGINE CO., Bridgeton, N. J.

Write for Free Catalog
with prices on money-back guaranteed
FOX MOTORS
22 Sizes - 3 1-2 to 75 H. P.
Up-to-date and complete in all details.
THE DEAN MFG. CO.,
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BARKER MOTORS
"Imitated, but Not Equalled"
Fine mechanical features.
Honest power ratings.
Reasonable prices.
Manufactured by
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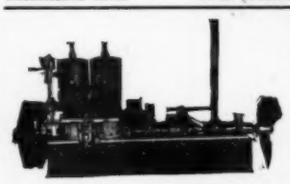
Norwalk, - - - Conn.

"LAWLEY BUILT"
Means the highest quality of workmanship and finish known to the fine art of boat building.
Steam, Gasoline and Sailing Yachts, Motor Boats, Tenders, Launches, Speed Boats.
Write for booklet.
GEO. LAWLEY & SON CORPORATION
Neponset, Mass., U. S. A.
Established 1866. Cable Address, "Lawley Boston"



The Brown-Collins Engine
1 1-2—90 H. P.
1 to 4 cylinders
The Brown-Collins Gas Engine Co.
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The most notable small cruiser of the year; 33 ft. long, 6 ft. beam, living accommodations for two men; speed 14 knots; a wonderful sea boat; fully equipped with electric lights, cushions, anchors, cables, running lights, etc. 1,200 pounds outside lead ballast; 18-25 1913 Sterling engine; boat planked with cedar; copper fastened; bronze strut and rudder; auto controls; fully described in October Power Boating; price complete $1,500.00 f. o. b. Boston; owner building a larger boat; only reason for selling. Address your own broker or
A. P. HOMER
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MORRIS CANVAS MOTOR HULLS
The most serviceable light hull in use. 14 miles per hour, for $250.00. High grade construction and equipment. Length 20 ft.
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Fewest moving parts of any practical engine on the market. 25,000 satisfied users. 30 days' trial. Demonstrator Agents wanted in every boating community. Special wholesale price on first outfit sold.
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BUILD YOUR OWN BOAT

Buy a frame, do the work yourself from our patterns and instructions and save three-fourths the cost. Hire local carpenters and save at least half the cost of the same boat if purchased at any yard or factory.
Our designs are the best.
Send for our catalog which tells you all about it
DeFOE BOAT & MOTOR WORKS
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"SUMMER GIRL"
25 ft. long. 5' 2" beam, $490.00.
This boat will give you more pleasure, style, comfort, speed and much more value than any other ever offered. Mahogany trim, copper fastened throughout, copper fuel tank. 4 cyl., 4 cycle motor. Full automobile control.
Write today for full information on this fine boat.
WESTERN LAUNCH & ENGINE WORKS,
1120 East 8th St., Michigan City, Ind.

12 ft. Skiff or Dinghy
All lumber cut and machined, with moulds, plan and full directions for putting together—$9.00. Any amateur can build it. Or the boat complete for $16.00.
Weight, 125 pounds. Write today for information.
WM. L. DALE, 123 River Ave., Bronx, N. Y.

A Gray for Every Boat

Daytona, Fla., Oct. 19, 1911.

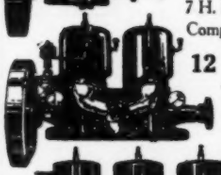
GRAY MOTOR COMPANY, Detroit, Mich.

Gentlemen: I selected the 36 H. P. Gray for its simple construction and compactness as well as appearance and the fact that it received its lubrication through the gasoline.

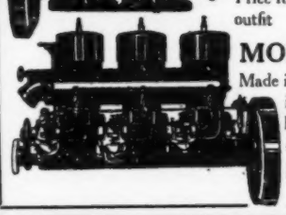
We ran our boat over 2500 miles last winter for charter parties and excursions on the Halifax River and tributaries in Florida, the hardest possible waters on a motor, on account of sand and mud bars, logs, etc., without ever stopping on account of a heated crank or journal. CAPT. RALPH NUTTING.

We want to hear from every man who has any idea of installing a new power plant between now and spring.

3 H. P. guaranteed to develop 4 H.P. Complete outfit **$55**



6 H. P., guaranteed to develop 7 H. P. Complete outfit **$89.50**



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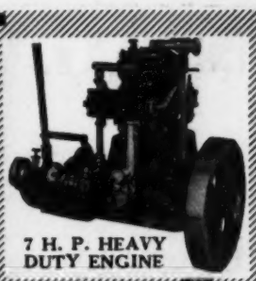
MODEL "T" Made in 1, 2 and 3 cylinders, 7 to 36 H. P. Price with complete outfit. **$115** and up

We want the opportunity of sending you our big engine book "M" and full details about these high grade, dependable, guaranteed engines, and we want you to have the chance to get better acquainted with GRAY Motors and with our methods. Write us today; it is to your own interest.

Gray Motor Co.
1174 G. M. C. Building
Detroit - - Mich.

REGAL ENGINES



7 H. P. HEAVY DUTY ENGINE

For twelve years we have been constantly experimenting and studying how to improve the Regal engine. If you could see how the first Regal marine engine looked and how our present engines look you might conclude our labors were not fruitless. If you are an engineer or mechanic you might also conclude that the improvements were not only in looks but in material used and in design.

We built up our name, known all over the navigable world as manufacturers of high-grade engines, upon these former models. Some of our later models were hard to improve upon. Many manufacturers and many individuals, perhaps even you, would say they could not be bettered in any way. We thought they couldn't, of course, at the time they were turned out. But experimenting and careful observation of the work they did often led us to conclude differently.

Getting out new model engines costs money. We, however, were always willing to pay the price when a better engine would result. Experience, we found to be correctly called a dear teacher, but it also is an infallible one.

If you are buying an engine you should consider its manufacturer as well as the points about the engine itself. The engine with experience back of it is a better guarantee of satisfaction than a fresh coat of paint or a nobby notion in design. The Regal engine has this experience.

Our experimental department has for twelve years been virtually trying to improve upon the Regal engine of today. They can't do it. The very fact that we let our present line represent the culmination of all our experience is evidence that we cannot improve them.

Write for our new catalogue. It will describe in detail how the many sizes of Regal engines are made.

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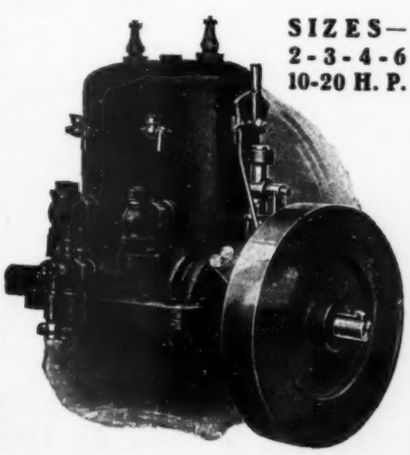
For its size and power this Northwestern Motor is the most compact and reliable engine ever put on the market. Cylinders are cast in one piece with water jacket surrounding both, thus insuring absolute alignment and even expansion from heat or cold, an item very troublesome where cylinders are cast separately and mounted on one base; the size of bore and stroke allows a very high speed with minimum amount of vibration. Engine can be used in a 20-foot boat, or will send a 35-foot hull at a good speed against a stiff stream.

Northwestern Marine Motor
10 H. P. 2 Cylinder

This has proven the most popular engine we make; is in use all over the world. Installed in U. S. Government lighthouse tenders, police patrol boats, pilot boats, etc., on account of its great reliability and durability. It is also used in a number of the fastest racers in the United States. Weight, 325 lbs. Speed, 600. Propeller, 18 inches.

Save on your marine motor this year. Get free catalog that fully describes Northwestern Motors.



SIZES—
2-3-4-6
10-20 H. P.

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Specify SPECIAL Low Tension MAGNETO
And have that satisfied feeling

With 1 Coil for 1-Cylinder, $20.00
With 2 Coils for 2-Cylinders, $25.00
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For Engines up to 4½ bore x 5" stroke, jump spark only.

STARTS THE ENGINE WITHOUT BATTERIES

Install this "K-W Special" Outfit on your boat and learn what it is to be free from ignition troubles at all times.

Larger Magnetos for larger engines. Our $35.00 Low Tension Magnetos run any sized Jump Spark engine when used with a K-W Coil.

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We Pay the Express east of the Mississippi River, or to the Mississippi on points beyond, when cash accompanies the order.

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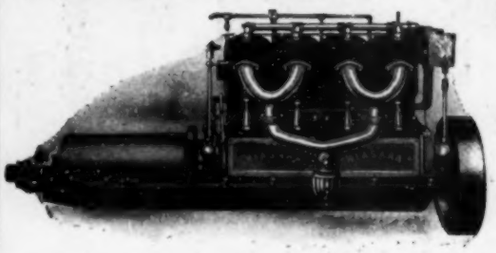

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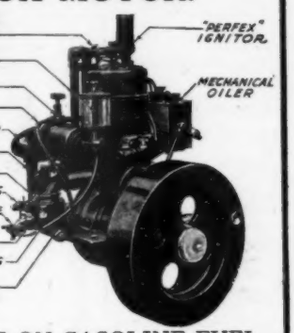

Do you know of a better way to earn and save money? Even the fellow trying to sell you gold mine stock cannot equal it. How do we do it? KNOX MOTORS will operate on KEROSENE FUEL, which can be purchased for 8c. or less per gallon, EQUALLY AS WELL AS ON GASOLINE FUEL, costing now 18c. per gallon, and still advancing. Figure it out yourself and then think it over. You cannot afford to overlook this true statement. WE GUARANTEE SATISFACTION. It is no experiment.

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We make these motors in sizes from 3 to 40 H.P., one, two, three and four cylinder, two and four cycle.

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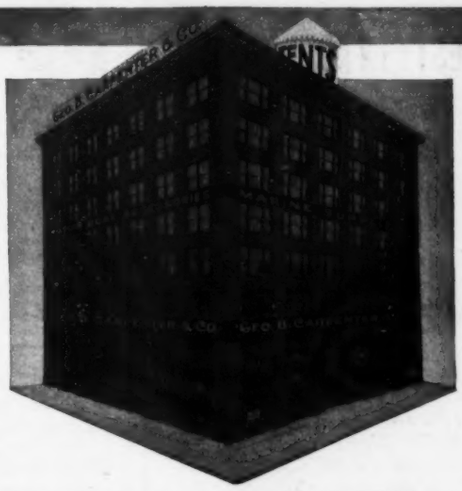

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Two Cycle Three Port Marine Motors

Simplicity of design, accuracy of workmanship and accessibility of all working parts find their highest development in Brown Engines. Their control is remarkably flexible, allowing either high speed or low speed at will. The fine materials used and the high standards of construction maintained enable them to give the exceptionally steady service for which they are noted.

Eighteen models of one to six cylinders, developing 1 to 70 H.P. Our 60-70 H.P. "Big Six" for 1912 is especially suited for racing. All engines thoroughly guaranteed. Regular equipment includes everything except exhaust pipe, gasoline pipe and gasoline tank.

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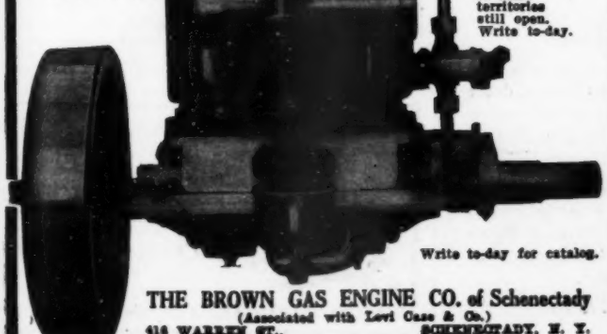

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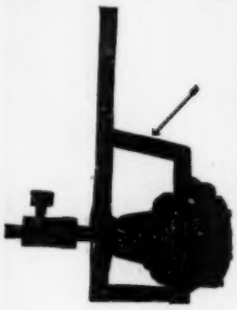

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Vertical and opposed four cycle, from 6 to 50 h. p.

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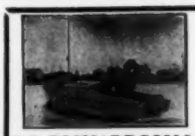

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Make your motor boat, sail boat or yacht a real pleasure craft by having Thermos a permanent part of its equipment. It gives you hot or cold beverages without fires or ice wherever you may be. Thermos keeps liquids steaming hot for 24 hours or ice cold for 3 days.

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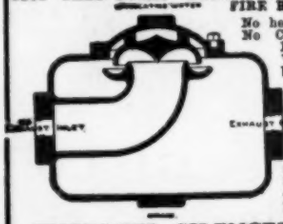

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Patents Pending.

Cranks your marine motor like an automobile, but without possibility of a back-kick. When motor back-fires, the crank handle is not affected. The chain and sprocket reduction makes it very easy to turn the motor over.

The Auto Safety Rear Starter is a perfect mechanism. Adjustable stand makes it possible to arrange crank at any desired height above engine shaft. Readily applied to any size or style of engine. Can be mounted upon bulkhead instead of stand if preferred.

Write today for information and prices.

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Made of an alloy metal that's strong as steel and positively non-corrosive in salt or fresh water. Endorsed by U. S. and used on her battleships and torpedo boat destroyers. The surest way to secure the maximum speed from *any boat* is to fit it with a genuine Monel Metal Propeller. Identify the original by the circular trade mark. Send for booklet.

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1 to 3 Miles Per Hour Increase Guaranteed

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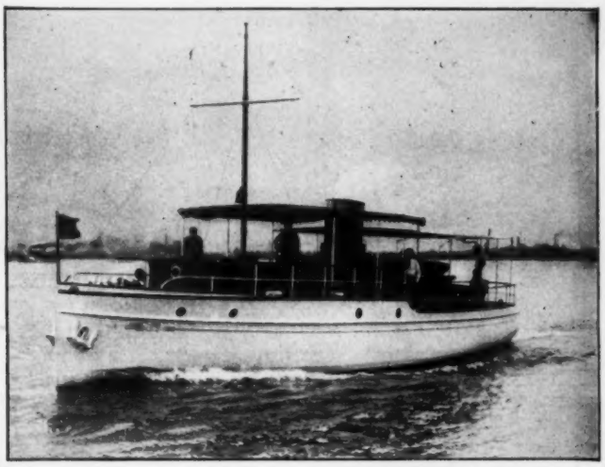

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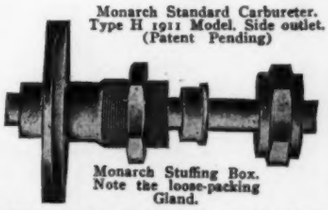
Monarch Pump Suction Connection and Strainer.

Monarch Standard Carbureter. Type H 1911 Model. Side outlet. (Patent Pending)

Monarch Auxiliary Air Valve. Will increase the power of your two-cycle engine.



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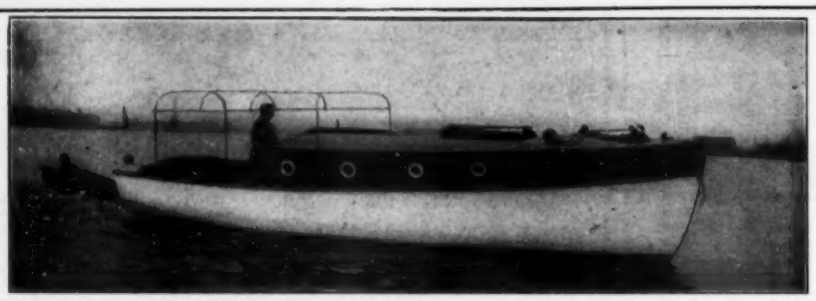

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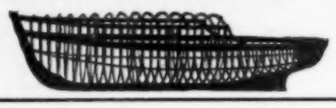

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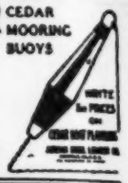

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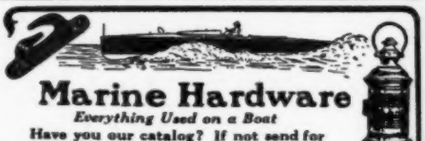

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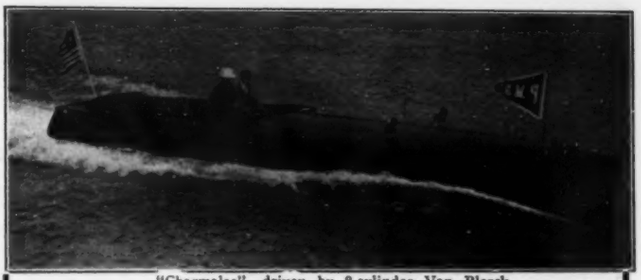

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I will be pleased to have you refer any intending purchasers to me. I will be glad to write them.

Yours truly,
(Signed) C. V. Cooper.

Send for our catalog No. 37 and information about Van Blerck motors.

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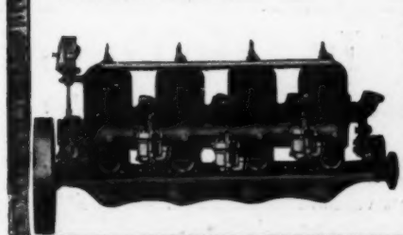

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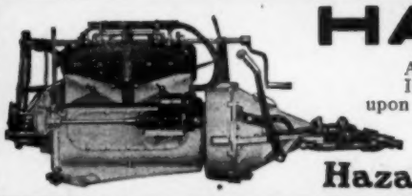

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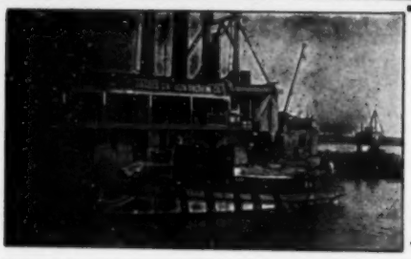

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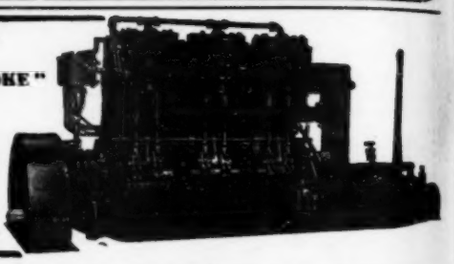

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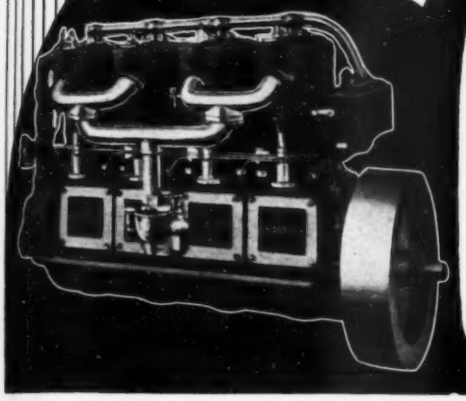

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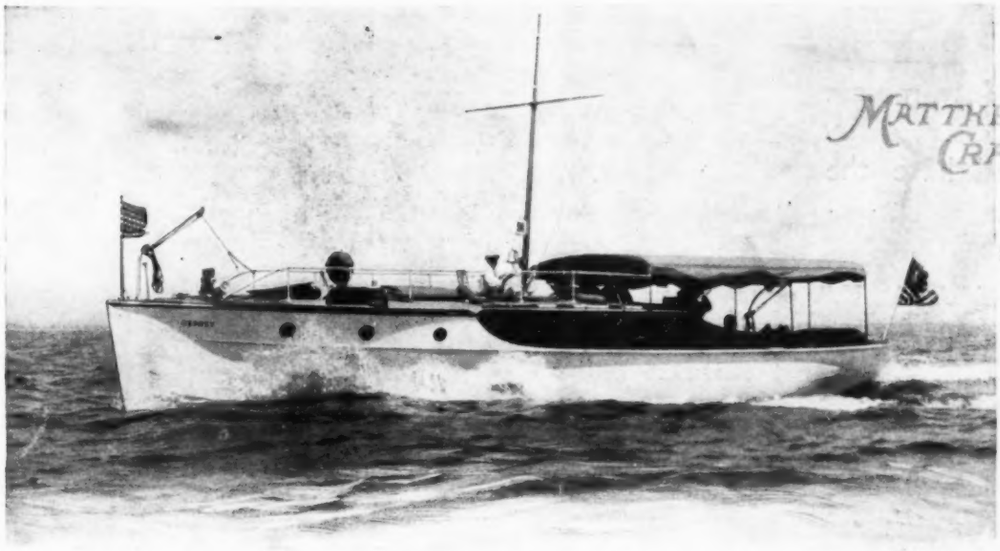

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Mr. S. J. MATTHEWS, President,
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Dear Mr. Matthews: The OSPREY is again all right. Last Saturday I put her through the worst thunder squall on record in the west end of Long Island Sound. The estimated speed of the wind varied from 75 to 90 miles an hour. I am sure it was greater than 75 miles an hour. My canopy was lifted out of the stanchion sockets, but no damage done. A large number of yachts were wrecked and several dismasted. For about ten minutes I put the full power of the engine on without moving a foot. The seas were big, but none came over the bow. I handled the boat on this occasion literally with one hand because my right arm has been in a sling for the past two weeks because of an accident. The OSPREY made as good weather as a 75-footer which was close along side. The wind was strong enough to lift a 30-footer off the timber blocking at the Yacht Club and throw the boat on her side, wrecking her.

I feel sure you will be interested to hear of this little affair, which increases my pride in the boat. Mr. Wells certainly did a good piece of work on this design.

I very much doubt if Mr. Brush has ever put the OSPREY through such a stunt as this.

The OSPREY is not for sale.

Yours very truly,
(Signed) G. M. BASFORD.

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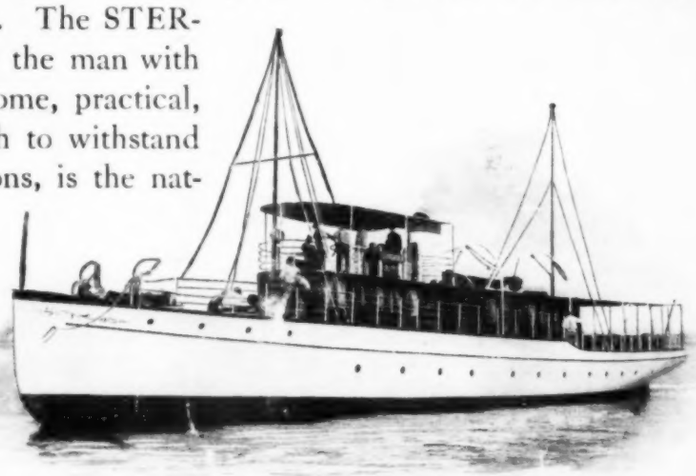

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